THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1852.

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TO READERS AND CORRESPONDENTS.

The interesting papers of Dr. John B. Porter and of Dr. Edward H. Clarke did not reach us until the original department of this Number was full; they shall appear in our next Number, as shall also the papers of Drs. Troy, Cock, Frick, Peirce, Patterson, Jarvis, and Kemp.

Several communications have been received which we have not yet had time to examine. Their authors shall hear from us at an early period.

The following works have been received:—

Essays on Life, Sleep, Pain, &c. By Samuel Henry Dickson, M. D., Prof. of the Institutes and Practice of Medicine in the Medical College, State of South Carolina. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

An Address on the Occasion of the Centennial Celebration of the Founding of the Pennsylvania Hospital, delivered June 10, 1851. By George B. Wood, M. D. Published by the Board of Managers. Philadelphia, 1852. (From the Author.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from August 5 to October 7, 1851, inclusive, and from November 6 to January 6, 1852, inclusive.

Proceedings of the Organization of the Physicians' Society, for Medical Observation, of Greene and adjoining Counties, Georgia. With the Constitution, By-Laws, and Rules of Order of the Society. Adopted at Gravesboro', October 20, 1851. Penfield, 1851.

Ninth Report to the Legislature of Massachusetts, relating to the Registry and Returns of Births, Marriages, and Deaths in the Commonwealth, for the year ending December 31, 1850. By Amasa Walker, Secretary of the Commonwealth. Boston, 1851. (From Dr. E. Jarvis.)

Transactions of the Medical Association of South Central New York, at the Annual Meeting held at Binghamton, June, 1851. Binghamton, 1851.

Illustrated Manual of Operative Surgery and Surgical Anatomy. By M. M. Cl. Bernard, D. M. P., and Cl. Huette. Edited, with Notes and Additions, and adapted to the Use of the American Student, by W. H. Van Buren, M. D., Surgeon to Bellevue Hospital, &c., and C. E. Isaacs, M. D., Demonstrator of Anatomy in the College of Physicians and Surgery, New York. Illustrated with steel engravings from drawings after nature. By M. J. Leveille. Designed to serve as a companion to the ordinary Text-Books of Surgery. Part I. New York: H. Bailliere, 1852. (From the Publishers.)

A Treatise on the Diseases of the Chest: being a Course of Lectures delivered at the New York Hospital. By John A. Scott, M. D., &c. &c. New York, 1852. (From the Author.)

Outline of the Nerves: with Short Descriptions. Designed for the Use of Medical Students. By John Neill, A. M., M. D., Surgeon to Wills' Hospital, Demonstrator of Anatomy in University of Pennsylvania. Second Edition. Philadelphia: Edward Barrington and George D. Haswell, 1852. (From the Publishers.)

Fiske Fund Prize Dissertation of the Rhode Island Medical Society. Homœopathy: an Examination of its Doctrines and Evidences. By Worthington Hooker, M. D., &c. New York, 1851. (From the Author.)

Manual of Diseases of the Skin, from the French of MM. Cazenave and Schedel. With Notes and Additions. By Thomas H. Burgess, M. D. Second American Edition, enlarged and corrected from the last French edition, with

Additional Notes. By H. D. Buckley, M. D., &c. &c. New York: S. S. & W. Wood, 1852. (From the Publishers.)

Review of Materia Medica, for the Use of Students. By John B. Biddle, M. D., formerly Professor of Materia Medica in Franklin Medical College, &c. &c. With Illustrations. Philadelphia: Lindsay & Blakiston, 1852. (From the Publishers.)

Outlines of the Arteries: with Short Descriptions. Designed for the Use of Medical Students. By John Neill, A. M., M. D., Demonstrator of Anatomy in University of Pennsylvania. Second Edition. Philadelphia: E. Barrington and G. D. Haswell, 1852. (From the Publishers.)

History of the Case of the late John Kearny Rogers, M. D. Addressed to the Profession. By Alexander E. Hosack, M. D. New York, 1851. (From the Author.)

An Essay on Organic, or Life Force. Written for the degree of Doctor of Medicine in the University of Pennsylvania. By J. H. Watters, A. B. Philadelphia: Lippincott, Grambo, & Co., 1851. (From the Author.)

A History of Epidemic Cholera, as it appeared at the Baltimore City and County Almshouse, in the summer of 1849, with some Remarks on the Medical Topography and Diseases of this region. By T. H. Buckler, Physician to the Baltimore City and County Almshouse. Baltimore, 1851. (From the Author.)

Hints to the People upon the Profession of Medicine. By W. Maxwell Wood, M. D., Surgeon U. S. N. Buffalo, 1852. (From the Author.)

A Table of all the known Operations of Ovariotomy, from 1701 to 1851, comprising 222 Cases: including their Synoptical History and Analysis. By Washington L. Atlee, M. D., Prof. of Medicine and Chemistry in the Medical Department of Pennsylvania College. Philadelphia, 1851. (From the Author.)

Remarks and Recommendations on the Professional Education of Dentists. By John Trenor, M. D., Dentist, New York. New York, 1852.

An Introductory Address to the Medical Class. By Wm. H. Byford, M. D., Professor of Anatomy in the Evansville Medical College. Delivered November 3, 1851. Evansville, 1851. (From the Author.)

Logic, in its Relations to Medical Science. An Address delivered before the Starling Medical College at its Third Annual Commencement. By Edward Thompson, M. D., D. D. Columbus, 1851.

Lecture, Introductory to the Course, on Materia Medica and Therapeutics, in the Medical Department of the Iowa State University. Session of 1851–2. By A. S. Hudson, M. D. Keokuk, 1851.

The Annual Address to the Graduating Class in the Medical Institution of Yale College, January 15, 1852. By Alvan Talcott, M. D. New Haven, 1852. (From the Author.)

A History of the Art of Midwifery: a Lecture delivered at the College of Physicians and Surgeons, Nov. 11, 1851, introductory to a Course of Private Instruction on Operative Midwifery; showing the past inefficiency and present natural incapacity of Females in the Practice of Obstetrics. By Augustus K. Gardner, M. D., F. N. Y., A. M., &c. Author of "Old Wine in New Bottles," &c. &c. New York, 1852. (From the Author.)

Introductory Lecture delivered before the Class of the Medical College of South Carolina, Nov. 1, 1851. By Middleton Michel, M. D. (From the Author.)

A Lecture on Gunshot Wounds: prepared to be read before Professor Dunbar's private class. By Richard McSherry, M. D. Delivered February 25, 1852. Baltimore, 1852. (From the Author.)

Discourses delivered by appointment before the Cincinnati Medical Library Association, January 9 and 10, 1852. By Daniel Drake, M. D. Cincinnati, 1852. (From the Author.)

Twenty-fourth Annual Report of the President and Directors of the Western Lunatic Asylum [of Virginia]. 1851. Richmond, 1851.

Fifth Annual Report of the Officers of the New Jersey State Lunatic Asylum at Trenton, for the year 1851.

Report of the Inspectors of the Western Penitentiary of Pennsylvania, for 1851. Pittsburgh, 1852.

Report of the Pennsylvania Hospital for the Insane for the year 1851. By THOMAS S. KIRKBRIDE, M. D., Physician to the Institution. Philadelphia, 1852. (From the Author.)

First Annual Report of the Board of Trustees of the State Lunatic Hospital of Pennsylvania, made to the Legislature, January 16, 1852. Harrisburg, 1852. (From Dr. John Curwen.)

Report of the Committee appointed to examine the several State Prisons of New York. Albany, 1852. (From Dr. B. Folgate.)

The following Journals have been received in exchange: —

Annales Médico-Psychologiques. Journal destiné a recueillir tous les documents relatifs à l'aliénation mentale, aux névroses, et à la Médecine légale des aliénés. Par MM. les Docteurs Baillarger, Brierre de Boismont, et Cerise. October, 1851. January, 1852.

Gazette Médicale de Paris, Nos. 38, 39, 40, 41, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 1851; and Nos. 1, 2, 3, 4, 5, 6, 1852.

Journal des Connaissances Médico-Chirurgicales. Publié par la Dr. A. Martin Laozer, October, November, December, 1851, and January, February, 1852.

Provincial, Medical, and Surgical Journal. Joint Editors, W. H. RANKING, M. D., and J. H. WALSH, Esq. December, 1851; January, February, 1852.

Dublin Medical Press. December, 1851; January, February, 1852.

Medical Times. December, 1851.

London Medical Gazette. December, 1851.

The British and Foreign Medico-Chirurgical Review. January, 1852.

London Journal of Medicine. January, February, March, 1852.

The Edinburgh Medical and Surgical Journal. January, 1852.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. January, 1852.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. RANKING, M. D. July, December, 1851.

The Retrospect of Medicine. Edited by W. BRAITHWAITE, Lecturer on Obstetric Medicine. July to December, 1851.

Medical Times and Gazette. January, February, 1852.

The Dublin Quarterly Journal of Medical Science. February, 1852.

Monthly Journal of Medical Sciences. Conducted by Professors CHRISTISON, SYME, SIMPSON, and BENNETT, and Drs. MACLAGAN and ROBERTSON. January, February, 1852.

British American Medical and Physical Journal. Edited by A. HALL, M. D. January, 1852.

Canada Medical Journal. Edited by ROBERT MCDONNELL, M. D., and A. B. DAVID, M. D. January, 1852.

The Stethoscope and Virginia Medical Gazette. Edited by P. C. GOOCH, M. D. January, February, March, 1852.

The New Orleans Medical and Surgical Journal. A. HESTER, M. D., Editor and Proprietor. January, March, 1852.

The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. PURPLE, M. D. January, March, 1852.

The Ohio Medical and Surgical Journal. Edited by RICHARD L. HOWARD, M. D. January, March, 1852.

The New Hampshire Journal of Medicine. Edited by EDWARD H. PARKER, M. D. January, February, March, April, May, June, July, 1851, January, February, March, 1852.

Nelson's Northern Lancet and American Journal of Medical Jurisprudence. Edited by HORACE NELSON. January, February, March, 1852.

Nordamericanischer Monatsbericht für Natur und Heilkunde. Redigirt von Dr. W. KELLER and Dr. H. TIEDEMANN. January, February, March, 1852.

The New Orleans Monthly Medical Register. Edited by A. FORSTER AXSON, M. D. January, February, March, 1852.

St. Louis Medical and Surgical Journal. Edited by Drs. LINTON, MOORE, MCPHEETERS, and JOHNSON. January, March, 1852.

The Western Journal of Medicine and Surgery. Edited by L. P. YANDELL, M. D., and T. S. BELL, M. D. December, 1851, January, February, March, 1852.

The Western Lancet and Hospital Reports. Edited by L. M. LAWSON, M. D., and GEORGE MENDENHALL, M. D. January, February, March, 1852.

The Charleston Medical Journal and Review. Edited and Published by D. J. CAIN, M. D., and P. P. PARKER, M. D. January, March, 1852.

The Opal: Devoted to Usefulness. Edited by the Patients of the State Lunatic Asylum, Utica, New York. January, February, March, 1852.

The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica. January, 1852.

The American Journal of Science and Arts. Conducted by Professor B. SILLIMAN and B. SILLIMAN, Jr., and JAMES D. DANA; Assisted in the Departments of Chemistry and Physics, by Dr. WALCOTT GIBBS. January, March, 1852.

The American Journal of Pharmacy, published by the authority of the Philadelphia College of Pharmacy. Edited by WM. PROCTER, Jr., Prof. of Pharmacy in Philadelphia College of Pharmacy. January, 1851.

The North-Western Medical Intelligencer. December, 1851.

The New York Medical Gazette and Journal of Health. Edited by D. M. REESE, M. D. January, February, March, 1851.

New York Medical Times. J. G. ADAMS, M. D., Editor and Proprietor. January, February, March, 1852.

The New Jersey Medical Reporter and Transactions of the New Jersey Medical Society. Edited by JOSEPH PARRISH, M. D. January, February, March, 1852.

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science. Edited by AUSTIN FLINT, M. D. January, February, March, 1852.

The Medical Examiner. Edited by F. G. SMITH, M. D., and J. B. BIDDLE, M. D. January, February, March, 1852.

The Transylvania Medical Journal. Edited by E. DUDLEY, M. D. January, February, March, 1852.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or to John Wiley, or G. P. Putnam, *New York;* or W. D. Ticknor, *Boston;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

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XIII. Essay on Life, Sleep, Pain, &c. By Samuel Henry Dickson, M. D., Professor of Institutes and Practice of Medicine in the Medical College of South Carolina, &c. 12mo. pp. 301. Philadelphia, Blanchard & Lea, 1852. - - - - - - - - - - - 473

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XV. An Analytical Compendium of the Various Branches of Medical Science, for the Use and Examination of Students. By John Neill, M. D., &c., &c., and Francis Guerney Smith, M. D., &c., &c. Second edition, revised and improved. Philadelphia, Blanchard & Lea, 1852: 12mo. pp. 1000. - - - - - - - - - - 491

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we are all pretty well. Mother
last Letter. hope you continue to improve. weather
continues cold & cold - Snowing to day.
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ART. I.—*Remarks on Scrofulous Inflammation of the Lung and Pulmonary Condensation, particularly in reference to the Occasional Similarity of the Accompanying Physical Signs to those of Tubercular Phthisis.* By WM. PEPPER, M. D., one of the Physicians of the Pennsylvania Hospital.

IT is now generally conceded by those most conversant with auscultation and percussion, that these means alone are frequently inadequate for the detection of disseminated tubercles; since, under these circumstances, respiration is not materially impeded, or pulmonary induration necessarily induced, particularly when the tubercular deposit has been of slow formation. In such cases, the diagnosis must be more especially based upon the previous history and attending constitutional disturbances. More commonly, however, the tubercles accumulate at the summits of the lungs in sufficient numbers to give rise to more or less induration, and, consequently, to those physical signs which are considered characteristic of this affection; such as irregular jerking inspiration, or prolonged expiratory murmur, and, at a later period, crepitation and slight vocal resonance in connection with obscure dulness of percussion. From the rapid manner, however, in which the above-named physical signs occasionally disappear, there is good reason to believe that, in many instances, they may depend more upon scrofulous induration of the lung than tubercular deposit.

Upon several occasions, on examining individuals supposed to have been suffering with confirmed phthisis, I have found the upper part of the lungs indurated by chronic inflammation, and interspersed here and there with a few tubercles—these latter, however, forming but a very inconsiderable part of the hardened mass. From such facts, I am strongly disposed to believe that scrofulous inflammation not unfrequently attacks the upper lobes

of the lungs; and although, as a general rule, it will be attended with a considerable deposit of tubercles, yet it occasionally happens that these form but a small part of the disease; so much so, indeed, that should the hardening of the pulmonary tissue disappear, the remaining tubercles would, in many instances, be latent, or, at least, not manifested by the ordinary physical signs. It is quite conceivable that an individual might thus be considered as having been cured of extensive tubercular deposit, when, in reality, the disappearance of the stethoscopic signs was owing to the removal of the accompanying scrofulous inflammation; and this is the more probable when we bear in mind that this form of pulmonary induration is rarely attended by the rusty sputa and fine crepitant râle so characteristic of the more acute forms of pneumonia, and by which it may at once be distinguished from tuberculous deposit.

Scrofulous inflammation and tubercle are so intimately associated in the minds of some, that it might seem paradoxical to speak of the occurrence of the former unconnected with the latter, either as cause or effect; and yet, judging from the pathological appearances above referred to, it is quite probable that this form of inflammation does occasionally invade the lung to a greater or less extent without giving rise to any considerable tubercular deposit; whilst, on the other hand, it is well known that tubercles may be developed independent of all inflammatory action, as the mere result of impaired nutrition, in connection with a diseased state of the blood, and that, when thus formed, they do not necessarily excite inflammation of the adjacent tissues. It frequently happens that these two pathological conditions are so blended that it is difficult to decide which was first formed; under such circumstances, it might be inferred that which ever was most extensive had also been first produced; and yet there would be many exceptions to this rule, particularly when it is remembered that the development of inflammation and tubercle may have progressed at very different rates. Dr. Graves, in his clinical lectures, very justly observes that "scrofulous inflammation may affect either the lining membrane or the parenchyma of the lungs, giving rise in the one case to scrofulous bronchitis, in the other to scrofulous pneumonia—two affections which may exist separately or combined, and either of which may prove fatal, with or without the development of tubercles in the lungs. Tubercles have too entirely engrossed the attention of those who have investigated the pathology of phthisis. They are a frequent product of the scrofulous diathesis; but the scrofulous bronchitis and scrofulous pneumonia are still more important, and do not, as is falsely supposed, depend upon the presence of tubercles in the lungs." Not only is it probable that scrofulous induration at the summit of the lungs may occasionally be mistaken for tubercular deposit, but it is even conceivable that this condition may, in some cases, lead to the belief that tubercular ulceration and excavation have absolutely taken place. Induration of the lung, from whatever cause induced, when in proximity with large bronchial tubes, frequently gives rise to physical signs more or less characteristic of vomica; and this is particularly true when the solidification

occupies the root of the lung, as in case of chronic pneumonia, enlarged bronchial glands, or tubercles. Under these conditions, a moderate amount of mucus in the tubes may readily give rise to gurgling; whilst the bronchial respiration and resonance of the voice, being rendered more intense by the consolidated lung, might be confounded with pectoriloquism and cavernous respiration. The same thing may occur at the summit of the lung, though perhaps not to so great an extent; and this is particularly the case in regard to the right side, where the tubes are larger and more direct than on the left. In several instances, at least, I have known physical signs in this locality (such as might readily have been ascribed to tubercular deposit or ulceration) to disappear in an incredibly short space of time; and I am strongly disposed to believe that many of the reputed cures of confirmed phthisis with vomica have, in reality, been but instances of scrofulous induration, which, it is well known, may sometimes be rapidly removed under the use of cod-liver oil, iodine, and other appropriate hygienic and therapeutic treatment.

This is particularly the case in regard to glandular swellings of the neck or other parts, which frequently subside in the course of a few weeks without leaving any traces of their former development; under such circumstances pulmonary irritation and even symptoms of confirmed phthisis frequently supervene. This connection between the recession of scrofulous swellings and the development of pulmonary disease has long been observed by medical men, and was particularly enforced by the late Dr. Parrish in his lectures. So fully convinced was he of this fact, that he deprecated the use of all external applications calculated to discuss such tumours, and considered the reappearance of the external swellings as a certain harbinger of an improved condition of the lungs. In several cases of this kind, I have observed that the retrocession of the glandular enlargement was followed by dulness of percussion below the clavicle, and other signs of pulmonary induration, which might readily lead to the belief of extensive tubercular deposit; and yet the speedy disappearance of these signs, with or without a return of the external swelling, has induced me to suspect that they depended rather upon scrofulous enlargement of the deep-seated glands and induration of the adjacent pulmonary tissue. When any considerable glandular enlargement exists within the chest, it is generally manifested by loud bronchial respiration and dulness of percussion at the upper part of the sternum or between the scapula; occasionally, however, the tumefied glands project into the right or left subclavicular space, and give rise to pulmonary irritation, and consequently to symptoms more resembling those of pulmonary than bronchial phthisis. Under the last-named circumstances, there being little or no pressure upon the important parts contained in the anterior mediastinum, the superficial veins will not be distended, or the respiration hurried and wheezing, as generally occurs in bronchial phthisis; and yet, the physical signs, owing to the fact that they depend upon scrofulous enlargement of the glands, may rapidly disappear as the glandular enlargement subsides. The tuberculous matter which generally exists in such cases

forms but a small part of the tumefied gland, so that when this latter may have become greatly diminished the former will be in a measure latent, as far as regards any indications to be derived from auscultation or percussion; occasionally, however, the enlarged glands contain no tubercular matter, and the recovery may then be absolute and permanent, and not merely apparent and temporary. In early life, the bronchial glands are more frequently affected with scrofulous inflammation and tuberculization than at a later period, and MM. Rilliet and Barthez have shown that this condition sometimes gives rise to an exaggeration of the physical signs, and thus leads to the belief that the bronchial respiration and dulness on percussion absolutely depend upon tubercular solidification of the pulmonary tissue itself. In several cases which have fallen under my notice, the most unfavourable prognosis had been formed, owing to the fact that physical signs, indicative of pulmonary induration, existed at the infra-clavicular regions; and yet, judging from the rapid manner in which the lung apparently regained its normal condition, I was strongly disposed to believe that the signs had, in a great measure, depended upon glandular enlargement. In the cases referred to, the individuals had passed the age of puberty, and had, at times, been subject to swellings of the cervical glands.

Before proceeding to the consideration of bronchial obstruction as a cause of pulmonary induration, it may be well to report the following cases in illustration of the previous remarks.

During the fall of 1847, I was consulted by a young man aged twenty-two years, by trade a tailor; of feeble constitution, but, from all I could learn, without any hereditary tendency to phthisis. From his own statement, it appeared that he had been troubled with cough for about two months previous to my seeing him, during which time he experienced some difficulty of breathing, particularly upon the slightest exertion; he had also lost flesh, and evidently suffered with hectic fever; the cervical glands of the right side were somewhat swollen, but much less so than they had been some time previously. Percussion over the right subclavian region was dull, and over the same extent the expiratory murmur was greatly prolonged, and somewhat obscured by mucous râles; at this part there was also considerable vocal resonance. Throughout the rest of this lung the respiration was exaggerated or puerile, and, although the upper and anterior part of the left thorax was motionless during respiration, the space above and below the clavicle was not depressed, as often happens when the summit of the lung is excavated or even indurated by tubercular deposit. The treatment consisted in the application of iodine ointment (grs. xx to the ounce of lard) over the upper part of the chest, and in the administration of eight drops of Lugol's solution of iodine with a tablespoonful of cod-liver oil three times a day; a nutritious diet, and moderate exercise in the open air during mild weather, were also enjoined. One month after this treatment had been instituted, there was a perceptible improvement both in the general and local symptoms, and by the first of January following, or about three months from the time he came under my care, the physical signs had entirely disappeared, and the patient had improved both in strength and flesh; the cervical glands,

however, still remained somewhat enlarged, though evidently less than when first observed.

In this case, the constitutional disturbance and physical signs closely resembled those which attend pulmonary tubercles; the dyspnœa, it is true, was somewhat greater than commonly occurs in the chronic forms of phthisis, which, in connection with the enlarged cervical glands, and the fact that the infra-clavicular space was not collapsed, might have led to the suspicion that enlargement of the deep-seated glands was the cause of the pulmonary symptoms; this opinion, however, was more fully confirmed by the rapid disappearance of the physical signs, and the comparative restoration of the patient to health.

A young woman, aged nineteen years, came under my care in the spring of 1849, suffering with cough and slight oppression; from her mother's account these symptoms had continued throughout the previous winter, and were attended with more or less emaciation and hectic fever; the catamenia had ceased for the last three months, but at no time had there been hæmoptysis; no member of her family had died with disease of the lungs. The percussion under the right clavicle was dull, and in the same locality there were resonance of the voice and bronchial respiration with occasional mucous râle; throughout the rest of this lung the respiratory murmur was loud, and the percussion natural; she expectorated daily about two drachms of muco-puriform matter streaked with blood. A tablespoonful of cod-liver oil, in connection with five grains of iodide of potassium, was administered three times a-day, and a small blister was kept discharging under the right clavicle. This treatment was perseveringly continued for two months, by the end of which time the physical signs had in a great measure disappeared; she had also gained flesh and strength, and no longer suffered with cough or hectic fever. Two weeks after this she left for the country, apparently in perfect health, and without the least trace of pulmonary induration.

The hectic fever and emaciation, in connection with the physical signs, left but little doubt that the patient was affected with tubercular phthisis, and yet it is hardly probable that any considerable induration from such a cause could have disappeared in so short a time; the probability is that the upper part of the lung was solidified by scrofulous inflammation, here and there interspersed with tubercles, which latter, however, were insufficient to give rise to any physical signs when once the induration of the pulmonary parenchyma was removed. At the same time, we are not disposed to deny the possibility of the lung being restored to a healthy condition when once indurated by tubercular deposit, or excavated by tubercular ulceration; such a result must, however, necessarily be of very slow formation, and could not explain the rapid disappearance of the physical signs as reported in the above cases. Although it is now generally conceded that tubercles may, under favourable circumstances, be absorbed, yet it must be confessed that such an occurrence is exceedingly rare, and based rather upon the disappearance of the general symptoms and local signs of tubercular phthisis than upon pathological anatomy. It is true that, in a few instances, the shrivelled condition of the

pleura, in connection with a calcareous deposit at the summit of the lung, has led to the belief that the albuminous portion of tubercular matter had been removed by the absorbents; at the same time, it should be remembered that similar deposits may be formed in the lungs as the mere result of impaired nutrition, closely analogous to the calcareous deposits found in the valves of the heart and aorta, as especially seen in the aged, or those long afflicted with the gouty diathesis. The subsidence of scrofulous enlargement of the cervical, bronchial, or other lymphatic glands, might also induce the belief of tubercular absorption; but, as before stated, in such cases the glandular enlargement may, in a great measure, or even entirely depend upon scrofulous inflammation unassociated with tubercle; so that the absorption of this latter cannot be inferred from the mere subsidence of the former pathological condition. Similar remarks may, with equal propriety, be applied to the supposed facility with which tubercular ulcerations of the lungs are said to be cicatrized; thus, the numerous instances in which the upper part of the lung has been more or less indurated and attended with puckering of the pleura can no longer be adduced as proof of such cicatrization, since it is well known that similar appearances may result from mere atrophy of the lung, as induced by an obstructed bronchial tube, or by pressure of calcareous or other deposit upon the nutrient vessels of the part. The only cases in which cicatrization of the lung is fully demonstrated by morbid anatomy are such as those referred to by Laennec, and more recently by Andral and other observers; in these instances, large bronchial tubes suddenly terminated in a firm cartilaginous structure at the summit of the lungs, and thus clearly showed that there had been a destruction of the pulmonary tissue; the tuberculous character of the pre-existing ulceration was rendered highly probable by the locality of the cicatrix, in connection with the facts that other tubercles were found in the lungs, and that the patients had at some previous period presented the usual symptoms of phthisis. Such appearances are, however, but seldom met with, and must evidently be of very gradual development. More commonly, indeed, even in those cases where the general health has been restored, the vomicæ never become obliterated, but are converted into semi-cartilaginous fistulæ, or, retaining their original dimensions, become lined with a delicate membrane, not very dissimilar to that of the bronchial tubes, and which for the rest of life continues to secrete mucus or muco-puriform matter; in all such instances, the physical signs, more or less modified, persist, notwithstanding the subsidence of the phthisical symptoms.

From the above statements, it appears reasonable to conclude that, in many cases at least, where the signs indicative of pulmonary induration, or even ulceration, have rapidly disappeared, the auscultatory phenomena may have depended upon scrofulous induration of the lung conducting the sounds from the large bronchial tubes, and thus leading to an erroneous diagnosis. It is not pretended that this form of pulmonary disease will, in all cases, readily yield to appropriate hygienic and therapeutic measures; since it is well known

that scrofulous inflammation most commonly becomes exceedingly obstinate and protracted, and may even prove fatal by gradually encroaching upon the pulmonary tissue, or by the ultimate development of tubercular deposit and ulceration; yet when we bear in mind that certain forms of external scrofula, such as glandular enlargements, do occasionally, under favourable circumstances, rapidly disappear, there certainly can be no good reason why a similar result may not occur in regard to the lungs. Cod-liver oil appears to exercise a remarkable influence in controlling scrofulous inflammation, and it has appeared to the writer not improbable that this remedy will be found to be more especially serviceable in those forms of phthisis where the parenchyma of the lung is indurated rather by scrofulous inflammation than by tubercular deposit; and hence it is that the oil is particularly efficacious in bronchial phthisis, and in those forms of consumption which are associated with the external evidences of scrofula, such as enlargement of the cervical glands and other unmistakable indications of this diathesis. Under these last-mentioned circumstances, it is no unusual thing to find a subsidence of the local signs corresponding with the general improved condition of the patient; whereas, in tuberculous phthisis, in the strict sense of the term, the auscultatory phenomena generally persist, notwithstanding the improved state of health; owing to the fact that they depend upon tubercular deposit and not upon scrofulous induration, as is generally the case in the first-named class of cases. Judging from the numerous instances in which tubercular induration and vomica are supposed to have disappeared since the introduction of cod-liver oil into general use, it would be natural to conclude that such instances would, at least occasionally, fall under the observation of those connected with a large general hospital, where numerous cases of tubercular phthisis are constantly admitted and under treatment; and yet I am free to declare that it still remains for me to witness the first case in which an *unequivocal* tubercular vomica has become cicatrized, whether revealed by an examination post-mortem, or during life by the gradual disappearance of the characteristic physical signs. I have already expressed my belief in the occasional occurrence of such cases, but experience has convinced me that they are exceedingly rare; in many instances, the auscultatory signs would be greatly diminished, or even temporarily disappear, owing to some obstruction of the communicating bronchial tube; but, in a few days or weeks, the same unwelcome sounds generally returned; in others, the physical signs depended upon pulmonary induration conducting the sounds from the large bronchial tubes, and gradually disappeared as the conducting medium was restored to its natural condition. At the same time, I most cheerfully bear testimony to the very excellent effects in many cases resulting from the use of the cod-liver oil. Inducing, as it frequently did, an abatement of the hectic symptoms and expectoration, together with an increase of strength and flesh, it appeared, at least for a while, to cause the lamp of life to burn brighter and longer, and thus afford precious time for the use of other important measures both hygienic and therapeutic. In incipient phthisis, it occasionally seemed

even to correct or so modify the existing diathesis as to prevent the further deposit of tubercular matter; but, as before stated, in no instance that has fallen under my observation did it appear materially to promote cicatrization of tubercular cavities.

Individuals of a strumous diathesis are especially liable to inflammation of the lining membrane of the lungs, and it is not uncommon to find scrofulous bronchitis recurring each year towards the approach of winter, as is usual with this form of inflammation; it often proves exceedingly obstinate and unyielding, and but little amenable to the antiphlogistic plan of treatment, or to the ordinary nauseating expectorants, such as antimony and ipecacuanha. In such cases, the oppression is occasionally much increased by the Schneiderian membrane becoming implicated, and thus obstructing the nostrils; but, what is still more important, this form of bronchial disease frequently becomes complicated with tubercular deposit, and, indeed, some of the most acute and rapidly fatal cases of phthisis appear to commence in this manner. Under these circumstances the tubercles are generally disseminated, and, therefore, not revealed by the usual physical signs. On the other hand, it occasionally happens that the scattered tubercles are first deposited quite independent of any pre-existing bronchial inflammation, and that this latter is the mere result of the irritation and pressure of the former; in either case, the tubercles are latent, and it is oftentimes no easy matter to discriminate between the idiopathic and secondary forms of bronchitis. A frequent pulse, in connection with high fever, copious perspiration, and great oppression, with rapid dilatation of the nostrils, occurring in an individual of strumous habit, and presenting the physical signs of capillary bronchitis, might induce the suspicion of tubercular disease; but some doubt would still remain as to the true nature of the affection, and nothing but the occurrence of dulness on percussion, or other signs indicative of pulmonary induration at the summit of the lungs, could render the diagnosis positive. In reference to this subject, Dr. Stokes uses the following language: "the occurrence of a partial or general and progressive dulness, in a case presenting the symptoms of bronchial inflammation, is one of the principal circumstances on which the diagnosis of tubercles depends." Unfortunately, however, in the cases under consideration, the dulness does not manifest itself until an advanced period of the disease, and, in many instances, the examination post-mortem alone reveals the true nature of the disease.

Dulness of percussion, depending upon pneumonia, is generally confined to the root or lower part of the lung, and is, for the most part, attended with characteristic expectoration and other symptoms clearly indicative of the true nature of the disease. An accumulation of mucus or muco-puriform matter in the small bronchial tubes, in connection with considerable pulmonary congestion, may also give rise to obscure dulness of percussion over the lower lobes; which, however, could hardly be ascribed to tubercular deposit, since, except in a few instances during early life, pulmonary induration from this latter

cause is first formed and most developed towards the summit of the lungs. In several cases, I have known the space below the clavicles to become dull owing to pulmonary condensation induced by plastic exudation or inspissated mucus obstructing one of the large bronchial tubes. As this condition occurred in connection with scrofulous bronchitis, and was well calculated to lead to the belief of tubercular deposit, it may not prove uninteresting, during the following remarks, to allude more fully to the errors of diagnosis which may result from this cause.

According to Andral, Stokes, Watson, and other observers, it would appear that, when a bronchial tube becomes suddenly obstructed by inspissated or concrete mucus, the percussion over the portion of lung supplied by such tube does not become dull or otherwise materially altered, and that the only physical sign characteristic of this condition is the total absence of respiratory murmur over the same extent; the patient also suffers with sudden dyspnœa, which is more or less intense according to the size of the obstructed tube; and speedy dissolution has even resulted from this accident. More commonly, however, the plug is suddenly discharged during a violent paroxysm of cough, and is followed by a subsidence of the oppression and a return of the respiratory murmur throughout the affected side. This form of bronchial obstruction might be mistaken for spasmodic asthma, sudden congestion of the bronchial mucous membrane, or even for acute emphysema. In these affections, however, the respiratory murmur, though feeble, is still audible, and attended with more or less mucous râle; whereas, in case of complete bronchial obstruction, neither râle nor respiration can be detected over a certain portion of the chest. When, however, the obstruction has been of gradual formation and of long duration, the general symptoms and local signs are entirely different from those which have been already described. Andral, in his *Clinique Médicale*, tome i. p. 196, states that when a bronchial tube is greatly diminished in caliber, or entirely occluded, the portion of lung supplied by the obstructed tube will occasionally be found hepatized or in a state of atrophy; and he alludes to the case of a monkey where the side of the chest was sunken, as in chronic pleurisy, owing to the pressure of a tuberculous tumour upon the main bronchial tube of that side. Drs. Bailly and Legendre have shown, in the most satisfactory manner, that in children some portion of the lung frequently becomes collapsed or carnified, owing to bronchial obstruction as the result of congestion or inspissated mucus, or as the mere effect of imperfect pulmonary expansion in cases of extreme debility. From the statements of these gentlemen, it would appear that this condition of the lung had been mistaken for lobular pneumonia so frequently found in young children. Dr. West, in his valuable Lectures on the Diseases of Childhood, refers to several instances in which this occurred even in adults, and expresses the full conviction that the carnified lung, so frequently found in typhoid fever, is owing to the same cause; he also observes that, in the aged, and where the power of the inspiratory muscles is much diminished, death may result from collapse of the lung. The patholo-

gical condition above alluded to is identical with that first described by Jörg, of Leipsic, under the name of atelectasis, or imperfect pulmonary expansion, as occasionally seen in new-born infants where the lung has remained in its fœtal state; under these circumstances, the lung is susceptible of inflation, provided the death of the infant has occurred soon after birth. At a later period, however, this result is produced with much more difficulty, and, in several instances, when the children have survived for some weeks, inflation has been found quite impracticable.

The physical signs indicative of this state of the lung are dulness of percussion over a greater or less extent, with vocal resonance and bronchial respiration; at the same time, when any considerable portion is condensed, the corresponding part of the chest may become motionless during the respiratory movements, or even slightly depressed or flattened. The above signs will, of course, be more or less rapidly formed according as the obstructing cause may have been gradual or sudden in its operation. Thus, when the collapse of the lung has been caused by mere debility or congestion, the signs may be rapidly formed, and yet promptly disappear under the use of stimulants or derivatives, and other appropriate treatment; so, too, when this condition is the result of inspissated mucus obstructing the tubes, we may perceive the signs rapidly form or disappear with the accumulation or discharge of the obstructing cause; but, on the other hand, the auscultatory phenomena may be slowly developed and more or less permanent when the tube has been gradually diminished by plastic or albuminous exudation. It is also important to observe that this condition may occasionally be attended with various râles, owing either to the imperfect collapse of the lung, or to partial permeability of the bronchial tubes; and that puerile or supplementary respiration will exist throughout the unobstructed portion. In like manner, the general symptoms will vary according to the duration and extent of the obstruction; when this has been suddenly formed and implicates an entire lobe, the dyspnœa will be urgent, and may even amount to orthopnœa; whereas, it will be but moderate, and, perhaps, only perceptible upon exertion, in those cases where but a small tube is obstructed, and particularly so when the obstruction has been gradually formed. Bronchial obstruction from plastic exudation occasionally occurs in ordinary catarrhal bronchitis, but has most frequently been met with in scrofulous subjects, and sometimes forms a serious complication in phthisis; it is also worthy of note that plastic or pseudo-membranous bronchitis occurs more frequently in the upper than in the inferior portions of the lung. The exudation may, at first, be but a thin layer confined to a limited extent of the bronchial mucous membrane in the form of a hollow cylinder, and thus only tend to diminish the caliber of the tube; at a later period, a new deposit is formed under the first, and tends still further to obstruct the entrance of air, until, finally, by the same process, the central opening becomes entirely closed. Under such circumstances, it is evident that the resulting pulmonary induration would be gradually formed, and might, if confined to the upper part of the

lung, be readily mistaken for tubercular deposit, since we would then have the gradual development of the physical signs usually considered characteristic of this condition, such as dulness of percussion, more or less râle, vocal resonance, bronchial respiration conducted from distant bronchial tubes, and occasionally a sinking and want of respiratory movement in the part of the chest corresponding with the condensed portion of the lung. When, on the other hand, the obstruction occupies a tube supplying the lower lobe of the lung, it might, in like manner, give rise to auscultatory phenomena not very dissimilar to those which attend the chronic forms of pneumonia or pleurisy. The absence of any considerable constitutional disturbance in case of mere bronchial obstruction would aid in forming a correct diagnosis; but, when the pulmonary condensation exists in connection with chronic bronchitis, the various symptoms attending this latter affection might, in a great measure, be ascribed to the indurated condition of the lung as revealed by auscultation and percussion. In the chronic form of bronchial obstruction now under consideration, the dyspnœa is not necessarily greater than in phthisis or other chronic affections of the lungs, nor is the paroxysmal character of the cough sufficiently marked to afford any important indication as to the true nature of the disease. In some instances, the expectoration of tough albuminous matter, moulded into the shape of the bronchial tubes, has induced the belief that the existing physical signs might depend upon the impaction of similar matter in some of the larger tubes; and this impression would be fully confirmed in case the pulmonary irritation and induration promptly disappeared after such discharge had taken place; but, as before stated, where the lung has been long condensed, it is not readily inflated, and must, therefore, require some time to regain its natural condition. In such cases, the gradual disappearance of the signs indicative of pulmonary induration might convey the impression that the individual had been cured of chronic pleurisy or pneumonia, or even that a considerable tubercular deposit had been rapidly absorbed. In some forms of bronchial croup, the exudation is not confined to a limited space as referred to in the above remarks, but extends into the minute capillary tubes, or even the air-cells themselves; so that the portion of lung, thus obstructed, presents a close analogy to phthisis, not only in reference to the physical signs, but also from the fact that the pathological appearances are not very dissimilar to those of tubercular infiltration. Several very interesting cases of this character are referred to by Dr. Stokes in his admirable treatise on diseases of the chest. The exudation in membranous bronchitis more resembles albumen than fibrin, and appears to be insusceptible of organization, and consequently never enters into organic connection with the mucous membrane; hence it is that in those cases of pulmonary condensation depending upon a local exudation of this character, the patients generally recover by the ultimate expectoration of the impacted mass. According, however, to the investigations of Reynaud, it would appear that the capillary bronchial tubes may occasionally become obliterated by adhesive inflammation, owing to the circumstance of

these ultimate ramifications bearing a close resemblance to the serous membranes; and, if such be the case, it is quite conceivable that the same obliteration may occur in those instances where the pulmonary tissue has long been condensed, and thus forever after render it insusceptible of inflation.

The following cases, having fallen under my observation within the last two or three years, may tend to illustrate some of the foregoing remarks, particularly in reference to the occasional difficulty in distinguishing between mere pulmonary condensation (as the result of bronchial obstruction) and tubular induration or chronic pneumonia.

A boy, aged about seven years, came under my care April 2d, 1849, suffering with severe bronchitis, attended with considerable oppression, high fever, and the usual physical signs. On the fourth day after my first visit, I perceived that the respiratory murmur was somewhat feeble under the left clavicle, and, in a measure, masked by mucous râles; the percussion, however, was unaltered, nor was there increase of the dyspnœa. By the 13th of the month, the respiration in this locality was slightly bronchial, whilst, at the same time, the percussion had become perfectly dull, and the movement of the chest during inspiration was less evident than on the opposite side. Under the use of ipecacuanha, squill, senega, and mild laxatives, the bronchial irritation gradually subsided, and by the 27th of the month, with the exception of slight spasmodic cough and some oppression, the general health appeared in a great measure restored. Auscultation and percussion, however, still revealed the persistence of induration at the upper part of the left lung; and, in addition to the physical signs already enumerated, there was now slight vocal resonance in connection with a perceptible depression of the left infra-clavicular region, whilst throughout the rest of this lung, and, more especially, at the posterior and inferior part, the respiration was much louder than on the opposite side, though, in other respects, perfectly natural. A small blister was applied under the left clavicle, and the child was to take two grains of the iodide of potassium, together with a nutritious diet and moderate exercise in the open air during all suitable weather. I did not see the patient again until the 7th of the following month, May, when I was requested to visit him at his residence, and was shown a mass of tough lymph or albumen which he had expectorated on the morning of the same day, during a violent paroxysm of spasmodic cough; the mass thus discharged was cylindrical, about an inch in length and the third of an inch in thickness, exceedingly firm, and coated with a thin layer of bloody mucus; he had also expectorated a small quantity of muco-puriform matter slightly streaked with blood. A feeble vesicular murmur could now be detected under the clavicle, but was, in a great measure, obscured by large mucous râles; the percussion, however, still remained dull, and the chest slightly depressed. From this time the cough gradually diminished, and soon ceased; and by the middle of the month, or about one week from the last date, all the physical signs had entirely disappeared.

In this case, the feebleness of respiration was at first ascribed to a temporary obstruction of the bronchial tubes by inspissated mucus, and but little importance was attached to it. At a later period, when unequivocal evidences of pulmonary induration had supervened, I began to suspect scrofulous induration, or tubercular deposit, and, consequently, formed a more serious prognosis as to the ultimate result. This opinion was still further

confirmed by the fact that the child had been delicate for some time previous, and had been subject to enlargement of the tonsils and other indications of the scrofulous diathesis. The result, however, clearly shows that the auscultatory signs in reality depended upon pulmonary condensation, the effect of bronchial obstruction: in no other way could the rapid disappearance of the physical signs be satisfactorily explained, since it is hardly conceivable that scrofulous induration, or tubercular deposit, could have been removed in the course of a few days; moreover, the flattened or sunken condition of the upper part of the left thorax could not be accounted for upon the supposition that the pulmonary induration depended merely upon glandular enlargement or chronic inflammation. In conclusion, it should also be observed that a marked improvement, both in the general and local symptoms, immediately followed the expulsion of the tough mass alluded to in the case. In a previous part of this communication, allusion was made to the fact that, when a bronchial tube became suddenly plugged up by impacted mucus, the portion of lung supplied by such tube frequently contained air, and that this condition was only indicated by the complete absence of respiratory murmur, and not by the usual evidences of pulmonary condensation; at the same time, it was stated that, when the obstruction was slowly formed and long continued, it would, in all probability, be unattended by any sudden dyspnœa, and would give rise to collapse or condensation of the lung, in connection with bronchial congestion and an accumulation of the pent-up secretions beyond the point of obstruction. Such, it is believed, was the condition in the case just reported.

On the 15th of March, 1850, I was consulted in the case of a young man aged twenty years, who was labouring under a slight catarrhal affection of several weeks' duration; he was without fever, but was pale and haggard, and suffered with a paroxysmal cough, and some oppression upon the slightest exertion; the expectoration was but moderate, and consisted of ropy mucus. Over the lower lobe of the left lung behind, the percussion was flat, and this part of the chest was nearly motionless during inspiration; the respiration was also slightly bronchial, and attended with more or less mucous râle, whilst, at the same time, the resonance of the voice and vocal vibration were evidently increased. At the upper part of the left lung, the respiration was puerile, and throughout the right side there was an occasional sonorous or sibilant râle. Five or six cups were applied to the posterior and lower part of the left thorax, to be followed on the succeeding day by a blister to the same part, and he was directed a teaspoonful every three hours of a mixture composed of equal parts of syrup of ipecacuanha and senega, containing a small portion of morphia; he also took, three times a day, one grain of calomel combined with two of Dover's powder. No notable change occurred in his condition up to the 25th of the month, or ten days from my first visit, and about two weeks from the time he had experienced any difficulty of breathing. On this day, however, during a violent fit of coughing, he suddenly discharged a large cylindrical piece of indurated mucus, or albumen, which was followed by a considerable amount of tough and exceedingly tenacious mucus, slightly streaked with blood; the mass was at least an inch and a half long, and a quarter of an inch thick, and was apparently composed of concentric layers, which could only with considerable difficulty be separated. The

respiration at the back of the left lung was now less bronchial than on the previous day, and was, in a great measure, obscured by loud bronchial râles; the percussion and other physical signs, however, had undergone no important change; the oppression still continued upon slight exertion, but was decidedly less urgent than it had been just previous to the discharge of the mass above alluded to. On the following day, March 26th, he expressed himself as quite relieved from all the previous distressing symptoms, and from this time forward there was a progressive diminution in the physical signs, which entirely disappeared by the 29th; convalescence now rapidly advanced, and by the end of another week his health appeared perfectly restored.

My first impression in this case was that the patient was laboring under chronic pneumonia of lower lobe of left lung, and a blister had therefore been applied over this part, in connection with the treatment above specified; but, from the rapid manner in which all the functional and physical signs disappeared after the discharge of the indurated matter, I felt persuaded that he had been suffering with condensation of the lung, caused by mechanical obstruction of the main bronchial tube supplying the lower lobe of the left lung. From the previous history, it would appear that the obstruction had been gradually formed, and persisted for at least two weeks, and it is somewhat surprising that under these circumstances the lung should have entirely regained its natural condition at the end of four days from the time the obstructing cause was removed. It is also worthy of observation that in this case there was no evident falling in of the chest, as in the former instance; this, however, may have been in a measure owing to the fact that, the patient having attained the age of puberty, the thoracic parietes were no longer as yielding as in early childhood.

Two cases somewhat similar to the one just reported have also fallen under my notice within the last few years, but, as unavoidable circumstances prevented me from making any record of the symptoms at the time they were under treatment, I shall at present but briefly allude to some of the most important features presented by them. In one instance, the patient was a young lady suffering with confirmed phthisis; but, as there was considerable oppression, with uneasiness and dulness on percussion over the lower part of the left thorax, she was also supposed to be labouring under chronic pleurisy of that side. After a long paroxysm of cough, she suddenly discharged a mass of condensed membranous exudation closely resembling that above described; this was, in the course of a few days, followed by a subsidence of the harassing cough and a total disappearance of the physical signs and dyspnœa, which had been supposed to depend upon chronic pleurisy of the left side. This patient, however, ultimately died of consumption. The other case was that of a gentleman of gouty diathesis, who had for some time been suffering with bronchial irritation. In this instance, the oppression came on gradually, and was attended with an increase in the violence of the cough, whilst, at the same time, the physical signs indicated an induration of the lower lobe of right lung. Here again,

as in the former case, immediate relief followed the expectoration of a mass of tough lymph, which had become completely moulded to one of the large bronchial tubes. From this time, the physical signs also rapidly disappeared, and convalescence was soon established.

The comparative rarity of this affection, together with the fact that its diagnosis is attended with unusual difficulties, has greatly tended to prevent any positive conclusion as to the means best calculated to afford relief. In the cases above alluded to, the treatment consisted mainly in the administration of senega, squill, ipecacuanha, and other remedies calculated to increase bronchial secretion, and thus promote the discharge of the impacted matter. Andral, with the same view, recommends kermes mineral, and the inhalation of various aromatic infusions, in connection with emetics. From the reputed good effects of the bicarbonate of soda in cases of croup, or where the bronchial secretions are exceedingly viscid, it is not improbable that this remedy might also prove useful in the class of cases now under consideration. For the same reason, calomel would seem to be indicated, provided no scrofulous tendency existed, and these various measures might be aided by the violent concussions resulting from the use of sternutatories.

Note.—Since the above communication was in type, my attention has been arrested by a very interesting article by Dr. S. T. Speer, in which views not very dissimilar to the above are advanced in regard to the occasional similarity of the physical signs attending scrofulous induration and tubercular deposit. I quote the following sentence: "Now it has been my lot to witness (more especially in the Parisian hospitals) cases which, on dissection, satisfied me that such was, in many instances, a wrong interpretation relative to the physical signs discovered during life, and which, instead of being directly attributable to tubercular consolidation, were rather the result of that stage of scrofulous inflammation of the parenchyma which tends to produce induration of the affected tissues." (*Medical Gazette*, June 13, 1851, and *Ranking's Abstract*, January 1852.) The article referred to, it will be perceived, was published some months previous to the date of the present communication; but I would at the same time state, that my remarks are solely based upon personal observation and reflection—the article by Dr. Speer, unfortunately, not having fallen under my notice until this late period.

ART. II.—*On Respiration.*—By JOHN W. DRAPER, M. D., Professor of Chemistry and Physiology in the University of New York.

I DESIGN in this paper to show that the explanation of the function of respiration, as usually given by physiological authors, is, in a very important particular, insufficient.

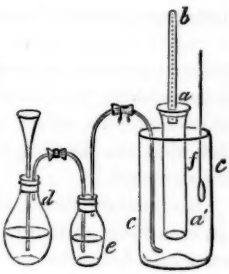
That explanation assumes that the passage of air to the blood presents three stages: 1st, its introduction to the trachea and bronchial tubes through atmospheric pressure; 2d, its further conveyance to the remotest air-cells by gaseous diffusion; 3d, its final access to the blood through the walls of the pulmonary vesicles and sides of the ramifications of the pulmonary artery by diffusion through those membranes. Thus, by the contraction of the diaphragm and other respiratory muscles, the capacity of the chest becoming greater, the air flows in from the external atmosphere, about seventeen cubic inches being introduced at each inspiration under average circumstances, a quantity scarcely more than sufficient to fill the nasal passages, the trachea, and the larger ramifications of the bronchial tubes; a portion of this air is immediately transferred to the cells by diffusive exchange, its oxygen passing instantly on to them, and carbonic acid and water coming in the opposite way; and, with a like rapidity, it percolates through the intervening tissues, and is commingled with the blood.

Now it is plain that this explanation necessarily involves the idea that the transit of a portion of air from the external atmosphere to the pulmonary vesicles takes place with very great rapidity; for, if it were not so, the quantity newly inspired, being nearest to the outlet, would be the first to be expelled by expiration. Under such circumstances, supposing breathing to go on, it would amount to little more than an alternate introduction and expulsion of atmospheric air, the effects not being felt at any great distance from the external orifice, and probably not reaching beyond the larger ramifications of the bronchial tubes. As the time elapsing from the commencement of an inspiration to the close of an expiration is only three seconds and a half, whatever changes occur in the constitution of this newly-introduced air must be accomplished with very great rapidity.

It becomes, therefore, a question for determination by experiment whether gaseous diffusion takes place with sufficient velocity to meet the conditions of the function of respiration. Although numerous experiments have been made on the *relative* velocity with which gases will diffuse into one another, I am not aware that any exact determination of the *absolute* velocity has been given. It has been taken for granted that it is very great, and some have even supposed that "a small quantity of carbonic acid would diffuse itself through a large volume of atmospheric air with the same rapidity that it

would dilate into a vacuum of the same dimensions." This is, however, altogether a misconception.

The arrangement I have adopted for the practical solution of this question is very simple. It consists of a tube four and a half inches long, and six-tenths of an inch in diameter, *a a'*, open at the lower end, the upper end being closed by a narrow tube, *a b*, divided into 100 parts, the joint at *a* being made air-tight by a cork. This compound tube, being full of atmospheric air, is suspended in a jar, *c c*, kept full of carbonic acid gas, which continually enters it from a generating apparatus, *d*, being the bottle containing the carbonate of lime and hydrochloric acid; and *e* a small vial containing water for the purpose of washing the gas and supplying it with watery vapour. The divided tube, *a b*, enters into the wide tube, *a a'*, by means of its cork, half an inch, so that the working length of the wide tube, from *a* to *a'*, is just four inches, and it is through that length that the diffusion takes place. The experiment is conducted as follows:—



At a given temperature, determined by the thermometer, *f*, the jar, *c c*, being filled with moist carbonic acid, the tube, *a a'*, containing atmospheric air, and having its graduated tube, *a b*, affixed to it by the cork, is suspended in the jar, as shown in the figure, for a given period of time. Diffusion of the carbonic acid now takes place in the upward direction, from *a'* to *a*, and, as soon as the given time has elapsed, the graduated tube, *a b*, is withdrawn from the cork, its extremity being instantly closed by the finger. The quantity of carbonic acid it contains is then determined by the introduction of potash-water in the usual way.

Now, it is clear that no carbonic acid can find its way into the tube *a b*, except after having diffused itself through the air in the wide tube *a a'*; that is, through a distance of four inches.

The experiments were made in a small room which was warmed by a stove, so that there was no difficulty in bringing the temperature to any required point, and, by a little management, keeping it stationary.

Experiment I.—The temperature being 60° Fahr., and time of exposure one minute, no trace of carbonic acid could be detected in the tube *a b*. It may, therefore, be inferred that that period is too short for diffusion to take place from *a'* to *a*.

Exp. II.—Temperature 60° F., and time five minutes; carbonic acid was found in the tube *a b*, potash-water removing seven parts therefrom.

Exp. III.—Temperature 75° F., and time five minutes; potash-water removes seven parts.

Exp. IV.—Temperature 90° F., and time five minutes; potash-water removes seven parts.

Exp. V.—Temperature 100° F., and time five minutes; potash-water removes eight parts.

From this, it would appear that, as the temperature rises, there is a slight increase in the rapidity of diffusion.

It was further found, on the closing of the wide tube at *a'* with a piece of tissue-paper, that the time of diffusion was greatly increased, being now twice as long as before. If the tissue-paper was wetted so as to be air-tight for moderate pressures, as shown by its becoming concave or convex by variations of temperature, the obstruction it occasioned was so great that in ten minutes no trace of carbonic acid could be detected in the narrow graduated tube. But when the tissue-paper was dry and perforated with pinholes, the time was shortened.

On examining these facts, it seems that the diffusion of carbonic acid into air, even where there is no obstruction and the distance to be traversed only a few inches, occupies quite a considerable period of time—a period which, of course, is increased if there be any obstruction or resistance in the way, and which must, therefore, be very greatly prolonged when the diffusion has to be made through slender, long, and winding passages.

The function of respiration could not by any possibility be accomplished in man if the interchange of gas contained in the pulmonary vesicles, with that most recently introduced, depended on molecular diffusion. The time requisite for such an effect to be completed through the narrow and long passages is far too great.

To some other agency we must, therefore, look for the complete explanation, and this, I think, is presented in the circular organic fibres of the bronchial tubes and cells. It has long been understood that these possess the power of varying the capacity of the tubes, and in morbid conditions, such as in the paroxysms of spasmodic asthma, their calibre is supposed to be very greatly reduced.

With this agency in view, we should therefore explain the respiratory act as follows: The carbonic acid, vapour of water, and excess of nitrogen, if any, which have accumulated in the pulmonary vesicles belonging to any given bronchial tree, are expelled therefrom by the muscular contraction of the circular organic fibres, and are delivered into the larger bronchial tubes, in which diffusion at once takes place with the air just introduced. As soon as the expulsion is perfect, relaxation of the muscular fibres occurs, and the passages and cells dilating both through their own elasticity and the exhaustive effect arising from the simultaneous contraction of other bronchial trees, fresh air is drawn into them; the alternate expulsion and introduction being accomplished by muscular contraction and elasticity.

I suppose that different bronchial trees submit to this action at successive periods of time, some being contracting whilst others are dilating.

In thus presenting the organic muscular fibres as the chief agent for the introduction of air to the blood, we raise them from the doubtful position they

have hitherto occupied in the estimation of physiological writers. "It is not known under what circumstances the contractile power which the bronchial tubes and, perhaps, the air-cells possess, by means of their organic muscular fibres, is brought into action. It is possible it may assist in expiration, but there is no evidence of its doing so."* From the foregoing experiments, it appears that the function of respiration cannot be explained without appealing to their agency.

The muscular action here contemplated produces a movement affecting the expulsion of foul air, analogous to the motion of food along the œsophagus, or of digested material along the intestines. In all these cases, the mechanical operation is the same. It is interesting to remark that in all instances the lungs are developed from some portion of the alimentary canal. In man, they appear as diverticula from the œsophagus, and, in much lower animals, from other parts of that canal. Thus, "in the Holothuriada, a membranous sac commencing near the cloaca and extending to the mouth, which, in the higher forms, is double, ramifies into respiratory trees, from which the expulsion of the water which has been breathed is effected by the contraction of the circular muscular fibres periodically. In the Bryozoa, the pharynx is dilated with the water, which, after aëration has taken place, is expelled. In the Tunicata, the pharynx, under the designation of the bronchial sac, becomes the special respiratory organ. In the Ascidians, the bronchial sac is emptied by the sudden contraction of its muscular walls. In the Salpians, the respiratory current is maintained by rhythmical contractions and relaxations of the muscular sac. In the Cephalopodous Mollusks, the current is sustained entirely by the muscular movements of the respiratory cavity."†

We might thus pursue the subject, and show that, in aquatic respiration, muscular contraction is constantly resorted to for the purpose of effecting the removal of the respired fluid. The same, too, is observed in the case of atmospheric respiration. It seems, indeed, to be the chief agent.

Concurring with muscular action is another force already recognized by many physiologists as taking part in the result. This is the motion of the vibratile cilia, which are found on the mucous lining of the bronchial tubes. In the lower orders, ciliary action is usually resorted to for ensuring a presentation of fresh portions of fluid to the respiratory surface.

The air, having arrived in the cells of the lungs, is next passed to the blood. In the lower tribes which have no disks, its oxygen is dissolved in the plasma; in the higher, it is taken by the hematine.

But before it can thus reach the disks, it must pass through the parietes of the cells, and also of the capillaries of the pulmonary artery.

Many physiologists have supposed that this exchange of oxygen for carbonic acid takes place on the principle of gaseous diffusion. On the authority of

* Kirkes and Paget's Physiol. Am. Ed., p. 131.

† Carpenter, General and Comp. Physiol., 1851, p. 740.

Valentine and Brunner, it has been asserted that the proportional exchange *actually* observed is 1174 of oxygen for 1000 of carbonic acid, these being the *theoretical* quantities under the law of diffusion.

Had the experiments, made twenty years ago in America by Professor J. K. Mitchell and others, been better understood in Europe, it would have been seen that this is a physical impossibility.

1st. In point of fact, the duty of the lungs is not restricted to the mere exchange of oxygen and carbonic acid, but is much more complicated. They likewise regulate the quantity of free nitrogen in the system. Oxygen, and very often nitrogen too, pass from the air to the blood; and there come in the opposite way carbonic acid, the vapour of water, and very often nitrogen. 2d. These various bodies are not all presented to one another in the gaseous state, as the theory would require, for some of them are held in liquid solution; and, were there no other reason, this alone, as Regnault and Reiset have remarked, is sufficient to show the inapplicability of that view. 3d. Even if all the exchanging bodies were in the gaseous state, the wall of the air-cell, of the pulmonary capillary, and of the blood-disk, would, by their condensing action, totally disturb the conditions.

With respect to this last point, I may refer to experiments which I published in this Journal fourteen years ago (*Am. Journal of Medical Science*, May 1838), from which it will be seen that the intervention of a pervious membrane of any kind totally alters the rate of exchange between diffusing gases. The law of Professor Graham is never mathematically true except when gases commingle without any intervening obstacle. The stucco partitions he used always disturbed the correctness of his results, as he found from his experiments.

If any one wishes to verify the force of this remark, it is sufficient to expose a soap-bubble, filled with carbonic acid, to the atmospheric air. If through its substance, which may be so thin as to be unable to reflect light, and, therefore, assume a velvet-black aspect, the gases exchanged under the law of Prof. Graham, for every 1000 parts of carbonic acid escaping 1174 parts of oxygen should be introduced, the bubble should consequently increase in size. But in a few moments it will be found to be collapsing, the carbonic acid escaping many times more rapidly than the air enters.

Under such circumstances, an aqueous film, not more than three-eighths of a millionth of an inch in thickness, can wholly disturb the law of diffusion, by the condensing action it exerts upon the carbonic acid and air respectively. What, then, should be expected from the moist walls of the air-cells and pulmonary artery, which conjointly are more than a thousand times as thick?

From these considerations, it would appear impossible to assign any definite rate as expressing the gaseous exchange between the interior of the cells and the blood; for, so far from being a case of exchange between two gases without any obstruction, the condition to which the law of diffusion applies, the nitrogen is, doubtless, in a state of solution in the blood, the steam in the

liquid condition of water, and, respecting the carbonic acid, nothing certain is known, whether it be in solution or chemically combined.

But while, for these pressing reasons, we are constrained to deny that the entrance of oxygen and escape of carbonic acid take place under the law of diffusion, and that their quantities are regulated by that law, there can be no kind of doubt that the phenomenon is wholly of a physical kind, in which substances in the gaseous state exchange with others dissolved in a liquid, or more intimately combined; the final rate being controlled by the condensing action of all the intervening membranes, the wall of the air-cell, that of the pulmonary capillary, and also that of the blood-disk. We have seen how a thin film of water can disturb these results, and no matter how thin the wall of the disk may be, it exerts its proper action.

It is generally admitted that the change of colour attending the arterialization of the blood is not so much dependent on the reception of oxygen and loss of carbonic acid, as on a change in the form of the disk, which becomes flatter when arterial, and more spherical when venous. The manner in which oxygen is associated with the colouring matter, the hematine, is perhaps not unlike what we observe in the case of another nitrogenized colouring principle, indigo, which, as is well known, can be oxidized and deoxidized, or turned white and blue, many times in succession, according as it is submitted to the action of atmospheric air, or to deoxidizing bodies.

If the foregoing observations are correct, we might explain the function of respiration in man, as follows:—

The air introduced by atmospheric pressure, brought into play by the action of the diaphragm and other respiratory muscles, fills, in ordinary respiration, the nasal passages, trachea, and larger ramifications of the bronchial tubes. Between it and the gas coming from the pulmonary vesicles, diffusion steadily takes place, tending to remove the cell-gas into the atmosphere; but this gas is not brought from the vesicles by diffusion, which could not act with sufficient speed, but by the contraction of the circular organic muscles of the bronchial tubelets and of the cells, the different bronchial trees not acting simultaneously, but successively. As soon as the contraction is over, the tubes expand by their elasticity, and air is drawn into the cells. It is probable that, in producing these results, the vibratile cilia conspire, and the effect is aided by the contemporaneous contraction of other bronchial trees, and the whole process ends with the expulsion of the foul air, which has accumulated in the larger bronchi and trachea by the diminution which ensues in the general capacity of the chest during expiration. In respiration, the lungs are not, therefore, passive, as is commonly said.

The exchange between the gas in the cells and that in the blood does not occur through simple diffusion, or in quantities proportional to the diffusion volumes of the oxygen and carbonic acid. It is a complex diffusion, in which the disturbances arise from the gases in the blood being either dissolved or combined; and through three intervening membranes, that of the air-cells, of

the pulmonary capillary, and of the blood-disk, all of which exert a condensing action, of the result of which it is impossible to furnish any numerical estimate.

Brought into presence of the hæmatin, the oxygen may possibly associate itself therewith, in a manner analogous to that which we witness, under similar circumstances, with deoxidized indigo.

In thus attempting to correct the account ordinarily given of the function of respiration, the only original points I present are, 1st, the necessity of admitting the *constant action* of the circular organic muscles; 2d, the *condensing action* of the three tissues, the wall of the pulmonary vesicle, of the pulmonary capillary, and of the blood-disk; 3d, the probable analogy between the relation of hematine, and another nitrogenized colouring principle, indigo.

ART. III.—*On Pleuritic Effusions, and the Necessity of Paracentesis for their Removal.* By HENRY I. BOWDITCH, M. D., one of the Physicians of the Massachusetts General Hospital. (Read before the Boston Society for Medical Observation, Oct. 20, 1851.) [With five wood-cuts.]

I HAVE chosen the above title to this memoir, in order that two distinct ideas may be brought before the mind, viz.: 1st, the simple idea of effusion of a fluid into the cavity of the pleura without reference to the character of the liquid, the cause of the effusion, or the length of time it has existed; and 2d, that paracentesis can be performed with safety, and should be done much more frequently than it is at present. I think that, in the course of this communication, I shall be able to convince the reader that individuals have died who might have been relieved by an operation; that paracentesis, as performed now by some Europeans, and in some parts of America, may be done with, at least, partial success in most cases, and with complete success and cure of the patient in others. Finally, I shall bring forward a method which, though originally suggested in Europe, was improved, and, so far as I know, first used in this country by Dr. Morrill Wyman, of Cambridge, Mass., a method more simple, less dangerous, and, in most cases, quite as effectual as the method pursued elsewhere.

From the times of Hippocrates, paracentesis thoracis has been at times performed, but generally as a last resource, and with a belief in the great danger attendant thereupon. Before Laennec's discovery of auscultation, it was impossible to arrive at a sufficiently accurate diagnosis at an early period of the disease; and, when some diagnosis had been made, the operation, as then performed, was much more dangerous than that which will be advocated in this paper. Laennec advises that the operation should be performed where dyspnœa, threatening life, supervenes in an acute pleuritic attack, and also in

chronic cases where other remedies fail. Neither this great author, nor Récamier, seems very hopeful of success. Since 1843, Messieurs Trousseau and Barby have repeatedly brought forward the necessity of the operation in acute pleurisy.* Mons. Valleix evidently disapproves of it, and would advise waiting, in acute cases, even where there is much dyspnœa; a course of proceeding I cannot too much deprecate whenever the physician can make use of the simple method already alluded to. Mons Valleix allows that paracentesis may be performed with more propriety, and with a doubtful hope of success in chronic cases. He is, however, by no means prepared to recommend it.†

Various modifications of the trocar and canula have been proposed by Messrs. Reybard, Sedillot Schuh, of Vienna, and Raciborski.‡ By most, if not by all of them, a larger trocar is employed than that used in the cases to be recorded in this paper.

Contemporary with Trousseau, Messrs. Hughes and Cock used the trocar in London with much success. In 1840, they began to operate. Their papers on the subject§ are very important, and it seems singular that they have not sooner affected medical practice on this side of the Atlantic.

Since their publications, several cases have been read, and discussions held thereupon, in London, and on the Continent. Among these, I may allude to articles published by Dr. Hughes, in 1847;‖ one read by Hamilton Roe, M. D., in April, 1844, on which a long discussion took place;¶ also one by Dr. Theophilus Thompson.**

A very interesting case is likewise given in the *London Medical Gazette*, April, 1850.

From these various papers I infer that the operation, simplified as it is in modern times, is strongly advocated by a few, and as strongly opposed by others, and looked upon with indifference by the mass of European physicians.

I pass now to the state of opinion in America. I think it may be safely asserted that the general voice of medical and surgical practitioners is, 1st, against the operation, even in chronic cases; 2d, that the operation, used and generally recommended, is the old plan of dissecting down and making a permanent opening between the ribs—an operation which well deserves the stigma cast upon it by a distinguished auscultator, who, in conversation with me, said he should be as willing to have a bullet shot through the chest as to have it performed on one of his patients.

My own experience in the matter of pleuritic effusions and of paracentesis thoracis, in connection with them, is as follows:—

Twelve or fifteen years since I saw, in consultation with another physician, a sailor, who had been for many months subject to dyspnœa and general de-

* Guide du Médecin Praticien, &c., par F. L. I. Valleix, vol. i. p. 564; Paris, 1850.
† Ibid., p. 575.
‡ Ibid.
§ Guy's Hospital Reports, April and Oct., 1844.
‖ London Medical Gazette.
¶ London Lancet, vol. ii. 1844, p. 190.
** Ibid., p. 191.

bility, slight cough, and no hectic paroxysms. One side of the chest was much more distended than the other. In one part of the breast it was particularly prominent, though there was nothing indicating a disposition to point. The side was perfectly flat on percussion, and the respiratory murmur could scarcely be heard. When I saw him, he was able to walk about. I suggested to the attending physician the propriety of puncturing with an explorer, and if a fluid was found, I advised an operation with the bistoury.

This was objected to, and in about two months the patient died. The pleural cavity was found *distended* to its utmost, by an immense quantity of a nearly transparent serum. This was the sole disease. Not a trace of tubercle, in either of the great cavities, could be found after a thorough examination. I felt convinced, at that time, that a trocar might have saved the man's life.

The second case, which I saw soon after, was as follows:—

A young woman, who, so far as I could learn after a minute inquiry into all her symptoms, had been perfectly well until taken with the signs of acute pleurisy, entered the Massachusetts General Hospital under the care of Dr. J. Ware. The usual remedies were applied; but the chest became fully distended, and after some months of residence she began to have rales at the top of the chest, and she eventually died of phthisis.

The question arose in my mind, if, after ineffectually using remedies, a puncture had been made, and the system relieved of the distress caused by so large an effusion, might not our patient have recovered? This question arose after phthisis had developed itself; but as I had, at the time of first seeing her, no idea that pleurisy could be the cause of phthisis, I did not feel the importance of paracentesis.* I certainly should be unwilling to allow any case under my charge to proceed, at the present time, as in the case just related.

In 1848, I had under my charge, at the hospital, a young girl. The right pleura was evidently distended with fluid, the result of acute pleurisy. I called a consultation of the physicians and surgeons, and, contrary to my opinion, it was decided not to operate according to the old method. The girl died of phthisis, months afterwards; no external or internal remedies having had the least influence on the amount of the effusion.

Soon after this, another case occurred in the hospital under my charge; and, at my request, Dr. J. M. Warren operated in the usual method recommended in all books of surgery. Partial relief was obtained, but the amount of suffering undergone by the patient during the operation, and the fact that an aperture is usually left open by this method, decided my views upon that operation, and that I would never recommend it unless under very urgent circumstances.

Soon afterwards I advised, in consultation with Dr. Stone, of this city, the

* I am well aware that some, who do not believe that pleurisy ever excites tubercular action, will say that I have no proof that some tubercles had not been existing previously to the commencement of the acute pleuritic attack. This criticism may be justly made, although I have no doubt in the premises, because my mind was fully convinced of the importance of a thorough investigation of the previous condition of a patient when attacked with pleurisy. In the instance related in the text, the person had all her functions in a perfect state, so far as I could learn, up to the hour of the acute attack.

puncture of the chest of a man who, though evidently suffering from organic disease of the heart, was likewise much oppressed by a recent effusion into one pleural cavity. A quantity of fluid was removed by the common trocar and canula, with some temporary relief.

In 1849 or '50, I saw the paper, already spoken of, by Messrs. Hughes and Cock, in *Guy's Hospital Reports*, and by it my views were confirmed as to the safety and propriety of paracentesis by the trocar and canula.

This paper afforded ample proof of the safety of the operation, as performed by these gentlemen, and I determined strongly to advise it in any case I might meet.

In the autumn of 1849, I was consulted in the case of a little girl, aged four years, who had been ill chiefly with attacks of dyspnœa for several weeks. I found her sitting on her mother's knee, apparently quite comfortable, but the physical signs of extensive pleuritic effusion were manifest. I advised the puncture; but a surgeon having been summoned, the little patient appeared so well that it was decided to *delay the operation until more urgent symptoms should occur.* Within forty-eight hours she died, on the supervention of a sudden fit of dyspnœa. I was allowed to use the trocar after death, in order to verify the diagnosis, and pure pus gushed out. I believed that death might have been prevented had the operation been done.

Finally, the following came under my charge, and, as it was the first case which I had control of in which Dr. Wyman's method was used, I shall enter into some detail:—

Case I.—B——, æt. 28, house-painter, I saw, April 17, 1850, at Woburn, his place of residence. His history was as follows: Five weeks before, having been previously quite well, he was attempting to raise a ladder to the side of a house upon which he was working. By accident, the whole weight of the ladder rested on him, and, directly after a great effort to sustain it, he was seized with a violent pain in the left side of the thorax. Some cough and hæmoptysis supervened, and he was confined to his room for nearly a fortnight, under the care of a homœopathic practitioner. At the end of that time, feeling better, and all his violent symptoms having subsided, he was allowed to go about and to transact business in Boston. In a few days, he became more ill than ever, and was considered by his friends and physician to be dying of a "rapid consumption." At the end of five weeks from the first attack, I was called. The patient was in bed in a semi-recumbent posture, suffering so much from dyspnœa as to be unable to easily converse with me. His pulse was 120, quite small. He was extremely emaciated. His voice was clear, and his countenance, though thin and expressive of suffering, had not exactly a phthisical aspect. It appeared that he had been unable to lie on his right side since his first attack, and not on his back until a week previous to my visit. Owing to the dyspnœa, I did not ask many questions, but, on examination of the physical signs, discovered as follows:—

Intercostal spaces of the left side enlarged. Total flatness, front and back, even to the apex of the same side.

Absence of respiratory murmur in the same parts, save at the very apex. Distant ægophony at the middle of the back. The heart was beating to the right of the sternum.

My diagnosis was effusion of fluid. No *positive proof* of pulmonary disease.

My proposed treatment, as the only means of saving his life, was the puncture of the thorax.

The friends objected, but the patient consented, and allowed himself to be removed to another boarding-house. Dr. Morrill Wyman, of Cambridge, I had previously summoned in consultation, as I knew that he had operated, a short time previously, with success upon a case of acute pleurisy threatening suffocation.

Dr. Wyman agreed with me as to the nature of the case, and the necessity of drawing off the fluid. Accordingly, on the second day after our first examination, Dr. Wyman used an *exploring* trocar, with a strong suction-pump attached thereto. The patient was placed in a chair, and a puncture was made* about four inches from the vertebræ, and just below the angle of the scapula. Only a small quantity of bloody fluid exuded, although the trocar seemed to be introduced as far as prudence dictated. In another part of the paper I shall allude to this failure. I will now simply state that we decided that it would be well to desist. The next day, however, having again thoroughly examined the case, I summoned Dr. Wyman, and told him another puncture was, in my opinion, necessary, and that I believed the instrument could be introduced, *capulo tenus*, without danger. No severe symptom, and only slight fatigue, had followed the first effort. Two days subsequently (April 23) we found more fulness and great tenderness of the left breast and side. The patient had perspired freely at night. His tongue appeared healthy; his appetite was good; he was somewhat costive. His cough had been less, and the expectoration had been about ℥ii of opaque mucus daily. Dr. Wyman operated a little back of the previous puncture, which was scarcely perceptible. Just before the operation was done, a violent fit of coughing occurred in consequence of the effort needed to place him in a chair. The patient was completely exhausted and bathed in sweat. His pulse rose to 138, and he felt quite faint. We were obliged to allow him to lie down. After resting some minutes, he was raised again, and ℥ix of pure pus drawn out through the trocar. The patient bore the operation very well, was less fatigued than by his access of cough, and felt relieved, in some degree, of the oppression about the chest.

He was ordered: Morph. acet. gr. ¼; pulv. ipecac. gr. ½; in pill at night. R. Potass. iodid. gr. ii; syrup symp. q. s. A. M. and P. M. Wine (unless heated by it) in small quantities.

From the time of the operation, April 23d, I date the commencement of his recovery, although there was no very sudden and decided improvement in any one of the rational or physical signs.

April 25th.—He complained much of tenderness of abdomen, and the bowels were costive. The pulse was 120, and he was bathed in sweat. On percussion, a little clearer sound was heard about the clavicle, but the respiration was decidedly bronchial there, and very obscure below. The heart was still beating most strongly to the right of the sternum, but was less so than before. Occasional attacks of dyspnœa.

He was ordered ol. ricini and a cathartic enema.

During the following night he had a sense of great distension of the chest, and thought that another puncture would be needed—but during a violent

* A description of the method of performing this operation will be given in another part of this paper.

cough he raised a large quantity of "matter" which gagged him, and afterwards some relief was obtained.

26*th.* All symptoms improving.

27*th.* Night "delightful;" cough much less. Between second and third ribs on left breast, one inch from the sternum, was a small crepitating tumour, evidently from air in the cellular membrane. Also a small tumour in the back of chest, apparently containing fluid, and seemingly about to open. I ordered a little beefsteak at dinner if he desired it, and had no abdominal pain. Half of the opiate pill at any time when the cough was severe.

Soon after this I was obliged to leave Boston for several weeks, and our patient was put under the care of Dr. William H. Thayer of this city.

On 28th, the Mistur. Ferri Comp. was ordered instead of wine, as that seemed to "*brace*" him too much. This medicine was continued and the iodid. potass. omitted. He gave up opiates on 8th of May (15th day from operation). His pulse varied from 120 to 113, to May 7th, with the exception that on May 10th and 13th, when sitting up, it rose to 132–4. The cough gradually subsided, as likewise did the expectoration, which on 17th was scarcely any. His respiration continued somewhat laboured. The digestive function was well, except that there was constipation. On the 1st of May (seven days after the operation) he sat up an hour. On 8th walked the room without fatigue, and 17th (24th day from operation) rode easily half a mile.

Of the physical signs, it was recorded that the emphysematous tumour in front had nearly gone on May 1st, and that no discharge ever took place from the fluctuating swelling in the back.

On *May* 28*th* (35th day from operation), I again took charge of him, and my report was as follows. Sits up much of the day; digestive functions perfect; has gained flesh; can walk half an hour without fatigue. No severe pain, but a soreness on coughing in the left chest; coughs most at night; expectorates about ℥ii daily. No hectic, but occasionally sweats. P. 124, sitting up; lies on either side.

Percussion front and back, nowhere completely dull. To third ribs scarcely any difference between the two breasts; below, less at left. The prominence of the left breast and the emphysema were gone; respiratory sound rude, almost bronchial; throughout the whole of the left breast a rubbing sound; no resonance of voice or crackling. Behind, obscure at apex; slight râle at the base; no ægophony. Learning that he had partaken rarely of meat, I ordered steak daily with wine, if it could be borne.

June 24*th* (62 days from operation). Steady improvement; had gained five pounds of flesh in two previous weeks, and had worked for two hours upon his farm. No cough for two weeks; no pain or dyspnœa except a little on walking. He was, in fact, so altered in aspect that I did not recognize him on his entrance to my office in Boston. P. 92, after rapid walking.

On inspection, chest slightly contracted, and left shoulder fallen. Percussion gives less sound throughout the whole of the left than the right side, but no flatness except at the very base. Murmur everywhere obscure at the left, hardly heard in the lower third of back. Where heard it is more healthy than formerly Voice rather resonant under the left clavicle. Heart in its normal situation. He was directed to be cautious, and to engage in some business which would give sufficient out-of-door exercise without too much labour.

From this period he gradually resumed work, and I did not see him again

until Dec. 18th, *i. e.* just eight months from the time of my being called to him, and nine months and a half from the first hours of his illness. I found he had worked at his trade for three months. Till within a month, he had had some soreness about the chest, and when I saw him he had it occasionally after "taking cold." He had steadily improved, weighed five or ten pounds more than ever before; looked in perfect health, and was of a ruddy complexion.

But the most unlooked-for change had taken place in the physical signs. Inspection showed no difference between the sides! Mensuration proved the left to be half an inch only smaller than the right.

Percussion gave nowhere any difference between the two sides, save a little difference of note in favour of the right, under the axilla. Respiratory murmur equally pure and soft throughout both lungs.

There are many points of interest in this case, among which I would name the following. *First.* Neither of the punctures of the chest caused any marked, immediate, or subsequent evil results. No dressing was needed on either occasion over the slight mark left by the trocar; aperture there was none, as the parts adjacent contracted strongly and closed it. *Second.* I would note the immediate relief to the patient, which, though not very marked in any one symptom, was nevertheless manifest to himself and to us. He appeared stronger, and better able to help himself after the operation than before. *Third.* The return of the oppression about forty-eight hours after the last puncture, and the relief obtained from the copious expectoration of "matter," and the subsequent emphysema on the left breast, are points of deep interest. *Fourth.* The gradual, but entire, restoration of the functions of the lung, so that nothing but a very minute examination could discover any difference between the two sides of the thorax, is worthy of notice. This result has been, in my practice, unusual—and the question arises whether the early removal of a large part of the effused fluid may not be the cause of the non-contraction of the chest, such as usually occurs in severe chronic pleurisy, which this case would probably have terminated in, if the operation had not been performed. *Fifth.* The quantity of pus extracted, though small compared with what we hoped to get, was, nevertheless, sufficient to give relief, and nature seemed able to take care of the remainder. This fact seemed singular at first, but having noticed the same effect in other cases, I am led to believe that frequently the absorbents are unable to act in consequence of the *over-distension* of the adjacent parts, and, if that be relieved, they become immediately able to resume their functions. Dr. Hamilton Roe sustains the same view.*

The results of this case were so satisfactory, that I decided to make use of the operation of paracentesis in any case where there was an effusion, causing great dyspnœa, even if organic disease should be found to exist in the lungs or heart. I will now lay more briefly before the reader more facts bearing upon this subject.

* London Lancet, vol. ii. 1844, p. 190.

Case II.—W. D. F., a seaman, aged 56, came from Wellfleet to consult me, Oct. 1, 1850. I learned that he had been usually at sea, and had never been liable to illness of any kind, until dyspnœa began, about seven or eight years ago. It was slight at first, with some pain at the epigastrium. He had been worse in winter than summer; but from the commencement he had found he could not do anything rapidly without suffering from dyspnœa. His other functions generally were well performed.

From March he had been growing worse. He was then at sea, very much exposed, and a cough had commenced. He had arrived home five weeks previous to consulting me, and felt obliged to give up all work, owing to the aggravation of all his symptoms. Two weeks before his arrival, orthopnœa began, and he had been unable to lie down more than half the night for seven weeks. Of late, there had been pain and swelling of the abdomen, and œdema of the legs, and even slightly of face. After the commencement of remedies his appetite had failed him, he had had a bad taste; the urine was dark and small in quantity. His aspect when he entered my room was that of a man suffering from the greatest oppression in breathing; his lips were livid, he spoke with great difficulty and with a constant panting. He walked very feebly. His pulse was 116, small and irregular.

On percussion, he was flat from below the second rib of the left side, front and back. Change of position changed the result, the most depending parts being always flat. The respiratory murmur was puerile in the right lung; obscure throughout left apex, and wanting below the third rib, front and back. Some mucous râle at the base of the right lung.

Ægophony near the lower third of the left breast and corresponding part of the back. Impulse of heart felt more under the sternum than usual, and over a rather large space. No bellows murmur. Sounds of the heart loud.

The diagnosis was probably disease of the heart, and great effusion into the cavity of the left chest. The question arose, whether any good would result from puncturing the pleura.

This question was decided by the increased dyspnœa that ensued the next day. The patient on that day was able to be up and dressed, and with great difficulty could get down stairs, but going up stairs seemed almost to take away all power of breathing. In the evening, I punctured below the lower angle of the scapula, between the ninth and tenth ribs, and drew off, with little difficulty, and great relief, ℥xxxvi of a clear, yellowish, serous-like fluid, which, however, soon coagulated into a thin, jelly-like mass, floating in a liquid. No faintness, no bleeding, followed the puncture. Patient felt stronger, and arose and put on his coat with much more ease than he had done for weeks previously. As he had had but little sleep for several nights, I ordered Dover's powder five grains at bedtime, and to be repeated if needed.

The next morning (Oct. 3), I found that he had had a better night than for six weeks; had lain down all the time; no "choking spells" since the operation, but some tickling in the throat; œdema of legs and swelling of abdomen less. Occasional slight pricking pain in the side, near the point of puncture. Pulse 108; lips less livid; whole countenance improved, less anxious. He was ordered a cathartic of jalap grs. x, and potass. sup. tart. ℥ss.

After the operation, he was directed to commence with the following, three times daily: potass. iodid. gr. ii, sarsaparil. syrup ℥i.

Diet, bread and weak tea night and morning. Small piece of fresh meat and vegetables, noon.

From this time until Oct. 12, *i. e.* for ten days, he had no attack of severe

dyspnœa; but for two or three days previous to the 12th he found that he was gradually becoming more oppressed. At times, he was obliged to sit up in bed at night. The symptoms previous to 12th were as follows: His cough was but slight, with very little expectoration. I kept the bowels freely opened with medicine, and continued the potass. iodid. The pulse on 6th was 96. The pain in the chest near the puncture was very soon relieved by applications of flannel wet in hop tea.

On the 5th, percussion gave a clearer sound; some resonance even three inches below the lower angle of the scapula. Rubbing sound over the whole breast, except over the cardiac space, and the respiratory murmur was heard, though much less distinctly than in the other lung, even to the base of the chest. Ægophony gone. Voice only slightly modified.

On 10th, he felt that the obstruction of his breath was returning; and percussion, with change of posture, showed an increase of fluid in the pleura. The heart, however, was more nearly in its right position. Its sounds and impulse were very obscure. No distinct bellows murmur.

On 12th, he reported orthopnœa again during the whole night, though no severe accesses such as he had previous to the operation. I proposed a second puncture as a source of temporary relief. It was consented to. I introduced the instrument two inches back of the first puncture, which was scarcely perceptible.

Thirty-two ounces of a fluid, similar to that first extracted, were drawn out. The same relief was obtained. Scarcely any pain was experienced until the very last part of the operation, when he felt a sense of "drawing" around the thorax, with dyspnœa.

The rubbing sound again occurred the next day, when the whole aspect of improvement was still more marked than immediately after the operation.

I ordered a blister 4×4, which he complained of most bitterly, and said it was worse than twenty operations.

On the 14th, he left the city for his home.

This case becomes interesting, *first*, from the ease with which the patient underwent the operation, and the great relief he experienced, temporarily at least. At the second operation, I was obliged to make two punctures; for, after having made one, the trocar being very thin, broke. At first sight this might seem a very serious matter. It is not so, however; the parts adjacent compress so firmly the instrument, that it cannot move; and it can be taken hold of very readily by the operator. The difficulty is wholly avoided, however, by having a firmer trocar. But the accident compels a second puncture, and it was made in the present case.

Second. The result suggests that we may use the operation in organic disease, for the purpose of lengthening life. I have little doubt that the patient would have soon died, had no operation been performed when he first came under notice.

Third. The results of the physical examination were sufficiently curious; and consisted, as I have noticed in other cases, in the return of the respiratory murmur in some degree; the rubbing sound, and improved sound on percussion; and the gradual disappearance of these favourable signs, and a return of ægophony, as the effusion returned.

I cite the case, not because I ever supposed that a permanent cure could be

obtained, but simply, as already seen, to prove the great ease with which the operation is performed, the great relief obtained therefrom, and to suggest that it may be used to lengthen life in an otherwise incurable case. We shall have this point of view brought into still bolder relief in Case VII. of this paper.

After his return home, the patient fell under the care of an "Indian Doctor," under whose directions he grew rapidly worse, with great dyspnœa and delirium, which two symptoms continued until within a few hours of death. He then became rational, and shortly afterwards was found dead in his chair, about four weeks after leaving Boston. A pint and a half of clear, serous fluid was found in the left, and a half pint in the right pleura. The pericardium likewise contained some, and the aortic valves were simply a bony ring. No great hypertrophy of the heart.

Case III.—J. D., æt. 28, machinist nine years, and obliged during that period frequently to lift a very heavy lever, by pressing the end of it upon his left breast, and, by a sudden jerk, raising it as required. Two years since he had rheumatic fever, and was ill about three months, and had been liable to some rheumatic pains ever since; but, with this exception, had been always well, till his present difficulties commenced. These difficulties were as follows, as I learned them from himself, while a patient at the hospital, under the charge of Dr. Storer. Three months previously, he began to feel some soreness about the left breast, at its upper part, and just beneath the spot on which the end of the lever usually rested. A little dyspnœa was noticed at the same time; and, upon looking at the part, the patient perceived that it was swollen. The dyspnœa gradually augmented, so that, in ten days from the time at which he first felt the soreness, he was obliged to give up work, which he had never resumed. He had some cough at first, for four or five days, but less before his entrance to the hospital. Until a few days previous he could lie most readily on the left side, as he had dyspnœa when on the right.

When I saw him he was pale, lying ôn the bed dressed, and evidently troubled by dyspnœa, especially during conversation. Respiration 48 per minute; scarcely any motion of the left side of the thorax; movements of the right side, very much exaggerated. Heart beating perceptibly to the finger, four inches to the right of the median line. Left breast very prominent, rounded, and tender on percussion, especially at its lowest part. Left side of thorax, front and back, flat, except at the very apex; but, even there, there was less resonance than in the corresponding part of the right. Change of position produced only slight change of sound. Ægophony under the axilla and around towards the angle of the scapula and vertebræ. Respiratory murmur almost null through the whole of the left breast, around the side, and to within two and a half inches of the vertebræ. Here it was heard slightly. Puerile throughout the right lung. The pulse after examination was 92, equal in both wrists. Patient said he had no cough or expectoration. His tongue was clean; his appetite was poor; he was costive.

The diagnosis in this case seemed evident enough, although the fact that the patient referred his complaint to a local oft-repeated strain, seemed peculiar. It, however, had some analogy with the evident cause of pleurisy in our first case. Accordingly, it was decided to puncture the chest.

During his residence in the hospital, he was tapped five times. The first three operations were performed during the first week that I saw him, and with the following results: On the first occasion, the trocar, introduced just under the angle of the scapula, brought nothing but a small quantity of bloody fluid. I presumed (erroneously, as I afterwards believed) that the lung had been punctured. I desisted. No pain of any severity occurred during, or consequent upon, the operation. Two days afterwards I introduced the instrument under the axilla, between the sixth and seventh ribs, and was surprised to find a similar bloody fluid. After removing about ℥i, I again desisted, and, on examining it with the microscope and by chemical reagents, it was decided that the fluid consisted of blood and pus. The non-coagulation of fluid, after standing, likewise convinced us that it was not pure blood. On the 14th of July, I operated again under the axilla, and removed ℥xvi of the same bloody fluid. As usual, little or no pain was felt, until the last moment, when, upon drawing hard with the suction-pump, the patient was somewhat distressed. He, however, arose and walked with more ease. The pulse, which was small before the puncture, was fuller afterwards, and not accelerated. The heart was felt two inches nearer the middle of the sternum, and the patient, besides experiencing entire relief to the sense of distension and soreness of the left side, had lost the feeling as of a hard pulsation about the right mamma.

From this time, the accesses of severe dyspnœa to which he had been subject disappeared, and in three or four days he was able to lie on the right side, which had been impossible before. The dyspnœa on talking still remained. The respiratory movements on the 19th were 36. The pulse, however, was accelerated 108, and the heart was again thrust beyond the right nipple. Digestive organs well. Strength very much as before. Lay dressed upon the bed most of the time, though occasionally he sat up.

On 19th, I punctured the fourth time, and drew with considerable pain a small quantity of fluid that seemed more bloody than previously, and, by the microscope, much fewer pus-corpuscles were found. I was surprised at this result, unless on the supposition of some organic malignant disease; and, as there was no very great distress in breathing, we decided to wait and watch the course of events. The patient continued rather improving in his general feelings till about Aug. 4th, when the dyspnœa became more severe, with greater tumefaction of the lower part of the left chest. The intercostal spaces were on a level with the ribs, but the distance between them was *less* than at the right. Great tenderness on touching the side. Pulse small, feeble, rapid. Countenance worse; more haggard; emaciation, and great debility.

Under these circumstances, feeling that there was probably organic disease, and certainly very little hope of giving more than a chance of relief and of life, we left the question to be decided by the patient, under a full knowledge of our opinions as to the critical nature of his complaint.

August 11th, he desired the operation; and, accordingly, the fifth puncture was made above the ninth rib, just under and outside of the scapula. One pint of bloody, but more purulent, fluid was discharged, with very marked relief to the dyspnœa and soreness of the chest, and with diminution of the prominence of the side of the thorax. Pulse 108 after the puncture. Previously to this puncture, a soreness had been observed in the sacral region, which, on the 12th, was so large and evidently fluctuating that it was opened with a lancet, with a discharge of pure pus. Aug. 13th, a similar tumour appeared higher up, in the region of the puncture. This likewise augmented, and, on 17th, it was opened with the lancet. One or two ounces of pus were dis-

charged, but, the aperture remaining open, the fluid gradually became more bloody and similar to that drawn through the trocar. This daily discharge gave relief to the dyspnœa, but the strength of the patient failed notwithstanding the use of tonics, and finally he left the hospital. A few days afterwards he died. No autopsy could be obtained.

Remarks.—The length of time the disease had lasted (more than three months) before the first puncture was made, and the peculiar nature of the fluid drawn off, led us to have less hope of doing good than we should have had in a more recent or more common case. Nevertheless, this case, more completely than those previously given, showed to me the innocuousness of the operation, and the slightness of the pain caused by it.

Second. Very great relief followed the two operations.

Third. The peculiar character of the effused fluid was very unusual. At first, it had so much the aspect of blood that, by the microscope alone, I was able to decide as to its nature.

Case IV.—I saw Mr. P——, æt. 48, June 4, 1850; he was then under the care of Dr. York, of South Boston. By trade a carpenter; he had never been very healthy. He had been sick ten or twelve times in his life, and had raised blood, about ℥ii, on one of these occasions. Always liable to attacks of "pleurisy." Ten weeks before I saw him, he had been taken ill, after a severe exposure during a wintry day to a violent and very cold wind, while he was shingling the top of a house. He, however, kept at work for a week, until after another exposure, when he was seized with a severe cough and pain in both sides, more in the right than the left. Some expectoration, five or six ounces, not bloody. His digestion was disturbed; his appetite lessened; at times, some distress after food; bowels regular. He had had, at times, dizziness. Had lost flesh and strength. At my first visit, he looked pale and thin. He could scarcely walk with ease, and talking produced dyspnœa. He was, however, able to sit up, and to move about with some difficulty. The physical signs were as follows: Percussion flat below the fourth rib of the right side, and extending round to the spine by a regular horizontal line. Change of posture produced a slight change of sound in front. Respiratory murmur almost null, from a line an inch above the lower angle of the scapula. In the upper parts of the lung it was much diminished. No ægophony, but the voice was less resonant at the right back than the left.

No râle anywhere in either lung. Right side, by measurement, a quarter of an inch larger than the left, and presenting a much more rounded appearance, especially in front; but the intercostal spaces were not more prominent on one side than the other.

My diagnosis was certainly an effusion into the right pleura. Probably a tubercular diathesis; but no positive evidence of the existence of tubercles in the lungs. I advised the puncture of the chest.

On June 9th, Dr. York introduced an exploring trocar between the sixth and seventh ribs, under the axilla. No fluid followed; but on drawing with the mouth, a small quantity of pus exuded. An attempt was then made to introduce a large flattened trocar and canula; with some difficulty this was done, but no fluid could be procured. The introduction caused much more pain than the exploring instrument. After having, however, introduced it as far as was thought prudent, the operation was abandoned.

11*th*. Another operation was made. The explorer was thrust in at least two inches; but, in whatever position it was put, nothing but a few drops of blood could be obtained. Thinking it possible that it had perchance passed through the pus into the lungs, I advised introducing it in another place a little forward, and that it should not be plunged so far. Immediately pus flowed slowly, and by the suction-pump we removed nine ounces. The patient felt much relieved, and arose and put on his coat with renewed strength. He had suffered scarcely any from the two punctures. It should be stated that those of the previous operation were hardly perceptible.

As the patient had night-sweats, he was ordered to take acid. sulph. dilut., and a nutritious but simple diet.

Five days after this (June 16th), my notes state that he felt no stronger; but that his cough and expectoration were much less, and that the sweats had diminished two-thirds. Pulse 116; appetite tolerable; slight diarrhœa for two days. Breathing nearly as difficult, but his countenance was better.

July 1 (20 days from the operation). Looks and feels much better; can walk a mile; has gained four pounds in weight; looks more *plump* about the face. On inspection, right side less than the other. Respiratory murmur better than before the operation; but still it is less than in the other lung. Pulse averaged from 100 to 110. In a few days he left the city.

I saw nothing more of him until Nov. 4, 1850, when he entered the hospital under my care; and I learned as follows: After going into the country, he grew weaker; the cough increased, and he expectorated half a pint daily. His appetite had been poor, and he had lost flesh. He looked feebler. He had had no hectic. He had pain in the *left* side of the chest. His pulse at the first examination was 120. Inspection showed no marked difference in size between the two sides. The left scapula was quite movable; the right was nearly motionless. On percussion, less clear at top of the right, increasing to perfect flatness in lower half. No difference on change of posture. Respiratory murmur less throughout the right, and scarcely perceptible below the spine of scapula. Puerile in the left. No râles anywhere, even on coughing.

Diagnosis.—Still no *proof* of phthisis. Undoubtedly, large effusion of fluid.

He remained in the hospital until May 6, 1851, when he was discharged, "not relieved." This, however, does not give an exact idea of the changes his local disease and his general symptoms underwent while under treatment. Until March 1, he was under my care, and subsequently under Dr. Shattuck's. I propose to name very briefly the symptoms as they occurred:—

His cough and expectoration, with a general debility, continued until the last. He was always more or less liable to pain in the affected side.

19*th*. I punctured on a line with the axilla, between seventh and eighth ribs, and could not obtain any fluid.

21*st*. I punctured four inches further back, and two inches higher; ℥viii of pure pus were extracted. At the latter part of the operation some blood came. A blister was ordered, and also some ale; and iodide potassium 3 grs. three times a day.

24*th*. Reported better than since entrance; the sputa were a little bloody. Sleep easier than for three months. Gained four pounds in two weeks. The physical signs improved slowly.

Dec. 1 (*i. e.* on 7th day after operation). There was resonance on percussion to the point of puncture. A rubbing sound was heard below the spine of the scapula, and indistinctly below the point of puncture. No râle anywhere.

The constant repetition of blisters, and the use of the iodide of potassium were advised.

7*th*. The report was that he slept better, &c.; less cough than for 8 months.

9*th*. A rubbing sound was heard to the base of the lung. Ordered to go out every fair day.

Soon afterwards, the cough increased, and "faintness and sickness" at the epigastrium; the expectoration was greater and bloody. He vomited bitter matter, and nausea remained.

19*th*. Reported better than since entrance; still gaining flesh; less nausea and expectoration. Right chest flattened, and shoulder lower than the left. Percussion still quite dull over whole right chest, especially at the lower one-third; and the rubbing sound was gone.

Jan. 2, 1851. Symptoms again worse. Heat, chills, &c. and appetite less. Some ægophony.

Between this date and Jan. 20, he had six blisters, four inches square, applied to the side, with decided benefit, and took internally syrup of iodide of iron.

20*th*. Rubbing sound had returned, and murmur was heard more distinctly.

Till Feb. 17, the same treatment; blisters constantly kept sore. At this date the cough was more severe, with ℥ii of sputa, of a ragged character. Opiate for cough ordered, and all other medicine omitted.

24*th*. He reported that he had gained 21 pounds since entrance.

26*th*. The expectoration and cough were less than at any previous time.

March 4*th*. Dr. Shattuck found a return of the fluid, as evinced by a change of posture. The cough also increased, and nausea and vomiting. Pulse 116. It had been always quicker than normal.

6*th*. Some indigestion. Juniper berry tea, nitrate of potass., &c. were ordered.

10*th*. Iodide of potassium was re-ordered, in doses of 5 grs., to be gradually increased, with blisters.

25*th*. The right side was found somewhat enlarged, and ægophony again returned with change of sound on change of posture. Pulse 92; skin rather warm; more frequent cough. Ice water compresses to the chest. These were continued for two days, with relief to pain; then omitted, and iodine was ordered to the side, and iodide potass omitted, and ¼ gr. oxymuriate hyd. ordered in syrup sarsaparilla.

During the early part of April, he complained of pain under right clavicle; otherwise remained much as before, save that on the 14th no change of sound on change of posture. Patient continued much in the same condition until May 3d, when he was discharged.

The different phases of this case are as follows:—

Dr. York operated with great relief, and the patient rapidly gained strength and flesh; the pulse fell; and the patient, on the 19th day, walked a mile. He then went to reside in the country, and was not seen again by me until four months after, during which he had fallen back, and the effusion was quite manifest on his entrance to my ward at the Massachusetts General Hospital. Two weeks afterwards I punctured his chest. This first puncture was fruitless. Two days after, another was made, and eight ounces of pus were drawn off; and on the eighteenth day from that time, a rubbing sound was heard all over the lungs, indicating an entire absence of fluid. On the twenty-eighth day the chest was somewhat contracted, and the shoulder was lowered. Meanwhile, all the rational signs were improving. Fourteen days afterwards,

on Jan. 2, another effusion was found to have taken place, marked by distinct physical signs, which, under repeated blisters of large size and iodide of potassium internally, was reduced by Feb. 24th, and the patient felt better than at any previous time. He then passed under my colleague's care; again effusion took place; and, after remaining two months more, the patient was discharged unrelieved from the hospital.

The points most interesting are:—

1st. The failures to obtain any fluid on two occasions of puncture. Of this I shall speak hereafter.

2d. The relief obtained from two operations.

3d. The return of the fluid and subsequent absorption of it under the influence of repeated and large blisters applied to the chest.

4th. The constant recurrence of effusion after repeated relief indicates the extreme difficulty of overcoming the *habit*, if I may so express it, of effusion gained by the pleura; possibly consequent, in part at least, on the long continuance of the fluid in the chest before the operation was resorted to.

5th. May not this last remark suggest to us the importance of operating *earlier* in cases that fall under our notice in the early weeks of the disease, and *oftener* in a chronic case? We ought not to allow any fluid to remain accumulated, and in a *quiescent* state, for more than the acute stage; and, in a chronic case, we must watch the earliest return of fluid, and draw it off before it can again distend the pleural sac, as it has done previously.

I am well aware that these are mere suggestions, and that I have no *proof* of their correctness. I think I shall, however, act on these suggestions, unless they should be strongly contraindicated in any particular case. Dr. Wyman assures me that he operated in one case of chronic pleurisy eight or ten times, and there was no permanent relief until the last puncture, at which less fluid was drawn off than at any previous one, and yet the patient apparently obtained greater relief from it than from all the others.

The following case I shall bring forward, in order to show the difficulties which are sometimes met with, which seem for a time insuperable.

Case V.—*July* 14, 1851.—I was requested, by Dr. Buckingham, to see a little girl, about six years old, who had all the signs of an enormous effusion into the left pleura. No exact history of the case could be obtained; the patient was brought into the wards in the very precarious condition she was in when I first saw her. The left chest was flat throughout. The heart was pushed to the right side; the respiratory murmur was very much lessened. She was evidently in a very hazardous condition; and as the only chance of saving life seemed to be the puncture, I punctured at three different places with two trocars; and although in each opening a little serous fluid exuded, I could not, with the greatest efforts, draw out more than an ounce and a half or two ounces of a thin fluid streaked with blood. If I had had a larger trocar at hand, and fitted to the pump, I should have used it. Not having such an instrument, we desisted. The little patient died in twelve hours, not having suffered, save in the most trifling manner, from the operation. No autopsy allowed.

Many questions arise when reflecting on this case, among which is the fol-

lowing: If we were certain that the patient was rapidly approaching death in consequence of the great effusion, why was not the pleura punctured in the common method, after the method followed by us was inefficient? In reply, I would simply state that it is always very easy to ask and to answer many questions after death, which are not so easy of solution before the fatal moment. Suffice it to say that the question of a more thorough operation upon the chest was mooted and decided in the negative, as I now think, wrongly. In another similar case I should advise the use of the common large trocar, and if that be insufficient, I should recommend a larger opening by incision.

But, regarding this case in connection with the use of the exploring trocar, I think it proves that the puncture can be made several times at once, without causing any very great uneasiness. In fact, the patient did not seem particularly affected by the operation. No increase of any symptom was manifest either during or immediately subsequent to it. The attendants thought her easier after than before the puncture.

Case VI.—In another case, of a young man who had been long ill, and whose whole form had been distorted by the effusion, I made two punctures under the angle of the scapula without effect, save to draw a little blood. No unpleasant results followed.

Case VII.—The following case is that of Miss ——, whom I saw in consultation with Dr. McGowan, of South Boston, Aug. 21, 1851. She was a spinster, æt. 29. She was never very strong. Many years ago had hip-disease, from the effects of which she is now lame. During every summer she had always been "ailing," and had had some tendency to diarrhœa. During the past winter had some cough after taking cold, and some during this summer. Catamenia generally regular and healthy. Had never had hæmoptysis. Two weeks before I saw her she had had "cholera morbus," and also severe pain in the left side of the thorax. Had not left her bed since this last attack. She had been unable to lie on the right side, and she had felt distended at the left. Cough wholly absent the previous week; some coldness of the feet, followed by fever and night-sweats. When I saw her she was in bed, pale and thin, but with no very great and apparent dyspnœa.

The pulse was 104; the skin cool. The tongue had a thin coat, and patient had anorexia. The diarrhœa had ceased, under pills of opium and acetate of lead. With some difficulty she was raised in bed, and a comparatively cursory examination showed as follows:—

A coarse crackling at the top of the right lung; bronchial respiration, with crackling, at the top of the left, front and back; diminished respiration at the lower parts; puerile in the corresponding parts of the right; percussion, flat over the whole of the left portion of the thorax. The heart was pushed to the right of the sternum.

Diagnosis.—Probably phthisis, with tubercles in both lungs; a few only at the right apex; numerous at the left, with condensation; and, in addition to these, a great pleuritic effusion.

The patient was informed that she had decided lesion of the lung; but that there was a chance of having the evil day put off, if she would consent to a puncture of the chest. At the same time, I promised only temporary relief. She consented; Aug. 23, I introduced the trocar between the eighth and

ninth ribs, below the angle of the scapula. A thin fluid immediately flowed out, and, by means of the pump, forty-one ounces of a thin, yellow, serous-like fluid were drawn out with very trivial pain, excepting during the first puncturing of the skin. Towards the end of the operation, the patient complained of an unpleasant and indescribable feeling about the chest. I accordingly desisted, although more fluid might have been extracted. The wound, as usual, closed immediately, and the patient expressed great relief to the distension of the thorax. No change of the pulse in consequence. It was quiet; at 100, before and after the operation. Her left breast became more resonant, and the heart fell back towards its true position at least one inch and a half. A cough came on during the operation, and was rather irritating from its constancy.

Dover's powder, five grs. ordered. Keep quiet; mild diet. If pain in the side, use bath of hop-tea.

Aug. 24*th.* She had passed a "delicious night," wholly free from pain and sense of feebleness. The cough had been considerable, and about a gill of yellowish expectoration. Her aspect was much better; less distressed. Pulse quiet, 80. Appetite improved. The fluid drawn was one solid mass, like calf's-foot jelly.

Respiratory murmur heard everywhere, even at the lowest part of the left chest. In front, there was a minute crepitous râle combined with a rubbing sound on taking a full breath. Behind, there were bronchial respiration at the top and indistinct râles below. Percussion showed that the lower third of the left back had become *more resonant* than the upper parts.

27*th* (4th day). Still improving; night excellent; able to lie on either side. Digestive functions, appetite, &c., better than for some time past. Pulse 80.

On percussion, breasts nearly equal. Behind, much as at former examination. Respiratory murmur as at last visit, except no crepitous râle, *and the râle was evidently less at the top of the right lung.* May chew steak, and have a little port wine.

30*th* (7th day). Little or no cough, but some pain in the left shoulder and side. More strength; patient sat up ten minutes. Pulse 86 to 90, after examination. In all respects the rational signs were improved. The heart was nearly natural in position. *No râles perceived at the right top.* Respiratory murmur more natural in left breast, but tubular sound very extensive and marked at top of left back. Hop fomentations to the side; cotton wadding over shoulder.

Sept. 3*d* (11th day). Percussion less dull, and bronchial respiration less at the left top. Slight sonorous râle heard on full breath, everywhere in both lungs. Lower parts of left lung much more free, and murmur heard distinctly to base, though much less clear than at the right. Heart, to the left of the median line, nearly in its natural position.

Up three hours on 1st inst. Pain in shoulder gone. Urine copious and clearer last few days. Some sweating last night. Continue iodide, &c. Apply new blisters. Take acid drops at bedtime.

Sept. 17*th* (25th day). Patient had continued steadily to improve in certain respects. The strength was much better. Was up all day. No night-sweats. Occasionally, slight febrile exacerbations. Appetite excellent; but, for a few days past, some diarrhœa. Emaciation rather greater. Respiration obscure throughout the whole of the left lung. Bronchial respiration less at the top. Râle only on coughing at top of the right back. No ægophony, or evidence of return of fluid.

Oct. 3*d* (41st day). Rode over to my office, distance of three miles. Had ridden daily, and was improving; but the tubercular physical signs still remained unequivocal at the top of both lungs, though less manifest than when I first saw her.

Nov. 12*th* (81st day). To-day I examined her, and found that all the physical signs had decidedly improved. Scarcely any bronchial respiration remained at the left top, and the percussion was less dull there. The respiratory murmur was more distinct throughout the lung. I considered her, nevertheless, a tuberculous patient. She died of phthisis late in December.

Observe some of the interesting points in the case. 1st. The perfect ease with which so large a quantity of fluid was drawn out, and the relief experienced.

2d. The rapid general improvement, although there was tubercular disease.

3d. The fine crepitous râle heard in the expanding lung.

4th. The rapid absorption of what fluid remained, and the falling back of the heart to its natural position.

5th. The lessening and almost entire disappearance of the distinct crackling at the top of the right lung; and the diminution of the signs of condensation at the top of the left.

6th. Is there any one who believes that the forty-one ounces would have been absorbed in ten days?

7th. Was not life prolonged by the operation?

Case VIII.—The following case I saw with Dr. H. W. Williams, who was kind enough to show it to me.

Mrs. H., Sept. 3, 1851, Irish, æt. 31, married at 18. Had had five children and three miscarriages. Was six months advanced in pregnancy. Had been intemperate, and had had delirium tremens formerly; but said she had drunk no ardent spirits for six or seven months, and this statement was believed to be true. Parents dead. Brothers and sisters alive and well. She had "a pleurisy pain" in the side several years ago, but of late had been well until ten days before Dr. W. saw her, when she had been exposed to fatigue by washing, and thought she had taken cold. After the third day she called at Dr. W.'s office, complaining of some dyspnœa and cough, with pain in the right side of the thorax, and diminished appetite. The tongue was nearly clean, and the pulse not accelerated—nor was the dyspnœa very manifest. Rest and demulcents and a sinapism to the side were ordered.

A week afterwards Dr. Williams was called to her, and found her in bed, with a troublesome cough; pulse 108; considerable dyspnœa; inability to lie horizontally on the left side; great pain on full inspiration; unable to sleep.

Puerile respiration throughout the left chest; absence of respiratory murmur and ægophony at the right, with dulness on percussion below a line one inch above nipple. Dulness varied its place on change of posture.

Trocar introduced about an inch below the lower angle of the scapula, and ℥xiii of a transparent, serous fluid were drawn out, with an improvement of the pulse and great relief to the dyspnœa.

Three leeches ordered if pain continued; to be followed by a blister.

4*th*. Night comfortable; slept several hours on the side; dyspnœa greatly relieved; pain much less; pulse 112; tongue nearly natural; chest more reso-

nant at the right; and the respiration could be heard feebly where not heard on third. Fluid taken previous day had a coagulum in its centre.

Blister ordered with iodide of potassium, gr. ii, in syrup sarsaparilla, three times daily.

5th. Better; no pain; pulse 96; very little dyspnœa, but cough very troublesome; auscultatory phenomena better.

Syrup. scill. and tinct. camp. op. for cough.

8th (5th day after operation, 12th of disease). I saw her again. She was sitting in a chair; pulse much as before; pain in the chest and dyspnœa gone, though she panted while speaking; slept better; cough still troublesome, causing a sore feeling in the chest.

The signs of effusion were fully as great as at first. Ægophony and dulness of percussion to the middle of infra-spinal fossa. Respiratory murmur heard to that point, though less than at the left side of the vertebræ. Below, it could scarcely be heard. In other words, the effusion had returned, but without the previous severe symptoms. Blister reapplied.

During 9th and 10th the physical signs remained nearly stationary, but she felt stronger; the pulse was 104 to 120; she had no pain, and was able to lie partially on the left side. The tongue was a little coated, the appetite poor, with costiveness. Until 16th (13th day from operation, 20th of the disease), she continued improving. On that day, I found her up and preparing her dinner over a stove. She looked nearly well; ægophony much less distinct and lower down; some râle about the angle of the scapula on full breath, apparently from the expansion of the compressed lung. Less dulness on percussion.

Feb. 5th (32d day from operation, 39th of disease). Casually, I called on her; she was at the head of her table eating a substantial meat dinner. All the symptoms were gone, save an occasional pain in the side and some dyspnœa (accounted for by her pregnancy, perhaps). Respiratory murmur less expansive in lower part of the right back than before. No râle; no ægophony; no difference on percussion of the two lobes.

This case is one of our most interesting: 1st. From the acute character of it—only ten days having elapsed from the first signs of disease. 2d. From the marked relief to the dyspnœa on the removal of the fluid. 3d. From the continued progress of the effusion, notwithstanding the other symptoms, save the cough, were less. 4th. The rapid convalescence from so large an accumulation: viz., on the 20th day the patient was at work, and although the fluid was not wholly removed, it was in the process of rapid absorption. 5th. The complication of pregnancy is important, as indicating that its existence does not prevent us from the use of the trocar.

In reviewing these cases, which I have given chronologically, we may say, 1st, that three out of the eight patients were cured of the pleuritic effusion, and that the operation had an important influence towards that end.

2d. Three of them were materially relieved in their rational and physical signs.

3d. Two of them were not relieved, for no fluid could be obtained.

4th. No one suffered more than slight inconvenience from the puncture.

5th. There were twenty-seven punctures, the largest number in any one case having been five. In two, there was only one puncture.

In one case, three punctures were made in as many minutes.

Symptoms subsequent on the puncture.—After no one of the twenty-seven operations did any serious or unpleasant symptom occur. Some complained more than others of the pain of the puncture. But usually this subsided entirely, as soon as the instrument was fairly introduced, and firmly held by an assistant. Towards the end of the operation, a severe pain was at times felt, or a sense of distension, of stricture, or of dragging; or, what was still more common, a peculiar, indescribable feeling of distress in the affected side. One patient compared it to faintness, and yet said she did not feel faint. *I always desisted when any severe symptom appeared.* There was sometimes a slight soreness about the part for a day or two, but never was there any suppuration or ulceration, and the wound closed instantly on the withdrawal of the canula. The results immediately following any successful puncture were very gratifying. In all, there was a *relief to the sense of oppression*, to the dyspnœa, and to the pain, when it existed. An ability to lie on both sides was gained by some often immediately, in others after 24 or 48 hours. A perceptible increase of physical power was manifested by all. They were able to move about with much more freedom. The men usually were able to put on their coats with less labour, and some seemed to do so even with alacrity, so much comfort in breathing did they experience in comparison with the dyspnœa felt a few minutes previously. In addition to these evident signs, there was an exhilarated mental condition. The mind, as well as the lung, seemed relieved of an intense weight, and displayed itself, among the more mirthful of our patients, in somewhat wild facetiousness and joke—while those of a more quiet temperament showed their delight of mind in a more sober style.

The *pulse* usually remained after the operation much as before. In one, who recovered, it was accelerated for some time after the other symptoms had improved. It was noticed as fuller in one, immediately after the operation, it having been feeble previously. Generally, however, it lessened in frequency after a few days, even if it was destined to rise subsequently on a recurrence of the effusion.

The *cough* was augmented, in most cases, for a few days after the operation. A patient who experienced the greatest relief, and who for a week had had no cough, was seized with one immediately after the fluid commenced flowing; and it was quite severe for about a week, with expectoration of nearly a gill the first day. Both symptoms ceased almost entirely after the lapse of time above named.

The *digestive functions* were usually improved. The appetite became better, or it commenced after there had been complete anorexia. In one patient, there was pain in the abdomen for two days subsequent, and, as it was com-

bined with tenderness and tympanitis, I feared peritonitis. These symptoms disappeared soon after the administration of a cathartic.

The physical signs changed more slowly. In two cases, there was an evident improvement in the results of percussion immediately after the operation; in four, I noted a diminution of dulness towards the upper parts of the chest, on the next day. In two, there was a decided improvement throughout the lung in twenty-four hours. Usually, however, the lower parts were a long time in recovering their healthy tone. This I attributed first, to the fact that the lung, when much compressed, requires considerable time before it can be distended; and second, that commonly there is some thick false membrane covering the layers of the pleura, which must become attenuated before a healthy sound can be produced.

Inspection showed a change in the form of the thorax immediately after the operation in two cases. Commonly, this change took place in a much more gradual manner. There was a perfect restoration of the shape in one case.

A *rubbing sound*, observed in four cases, was noticed in the first twenty-four hours in two, and on the 3d day in the two others. It commenced usually over the breast, and thence gradually extended. I have heard it all over the lung, and, in the majority of the cases, it was quite distinct.

Ægophony.—The time of disappearance of this sign was noticed in only one case. In that, it had gone before the third day.

Once I found a fine crepitous râle existing in a lung, which had been relieved of compression forty-eight hours before. I presume it was owing to the gradual expansion of the compressed lung, because I could not hear it, save after a long breath, and there were no symptoms of pneumonia. *In this same individual, the râle that had existed at the apex of the other lung, and which I had regarded as probably indicating the existence of tubercles, disappeared within a week after the removal of the fluid*, leaving only an indistinct crumpling or coughing, and forced inspiration.

One very important sign was quite manifest in two of our cases, viz., *the falling back of the heart*, when it had been dislocated by a large effusion into the left chest. This I observed twice, immediately after the operation, and possibly the same result would have been noticed in others, had I made a sufficiently accurate examination. In one of these cases, the patient perceived it, and said that he felt relieved of the soreness and thumping that had been about the right nipple, previously to the operation. But in all the cases, where there was such dislocation, the operation sooner or later removed it; the organ being longer out of place where pus was effused, than when simple serous fluid was formed.

The *respiratory murmur* was in all the cases a long time before its entire restoration, although a very decided change was produced in a few days. In one case only has this been perfect, after many months of illness. Two others may be in the category, but they are still under treatment. The character of the fluid in the chest has apparently some influence upon the result, as the

following table will indicate. In four cases, two purulent, two not so, we have

	Respiration tolerably clear in	Respiration quite clear in
Purulent cases		8 months or never.
Non-purulent cases	24 hours and 3 days.	

The reason for this difference is probably the existence of the thick membrane before alluded to.

Quantity and quality of the fluid removed, and their influence on the result. The quantity varied from ℥iv to ℥xli. The medium of six operations was ℥xxiv. Although the removal of a large quantity (30 or 40 oz.) gave very decided and prompt relief, as much apparent comfort was at times experienced when a smaller quantity (9 oz.) was removed.

The quality of the fluid was pure pus in two patients. Of these, one is now wholly well. The other is tuberculous. In four it was a thin, yellow fluid, which coagulated on standing. Of these one recovered; one has lost all traces of effusion, but she has tuberculous lungs. A third, having cardiac disease, died, but the effusion never returned to so great amount after the operation, and life was prolonged by the operation. In the fourth, there was probably coagulation of the fluid in the chest, and it could not be drawn off. My inference from these facts is that the quality of the fluid cannot afford us any indication as to the prognosis, save that when a purulent fluid occurs, a longer time is occupied for cure, as we have previously stated.

Finally a bloody fluid was found in one. He did not recover.

Our cases are so few that we can give but little positive information upon the effects, produced by the age of the patient and the duration of the disease, upon the ultimate result of the operation.

In six cases, the average age was thirty-three and one-third years; the oldest, fifty-six; youngest, twenty-eight.

Great age has been generally considered unfavourable for the operation of paracentesis. Of three of my cases, in which one got wholly well, and the others are rapidly improving, though still under treatment, the average age is twenty-nine and one-third, or four years less than the average. Of the three other cases, none of which have been *permanently* improved, the average age is forty-two, or more by nine and a half years than the average.

The length of time the disease has lasted is of as much importance perhaps as the age of the patient. The respective durations of the disease previous to the operation in the three cases above named, in the first category, were six weeks, two weeks, and ten days; average, twenty-two days.

In the last three, one had had dyspnœa seven years, and had grown much worse during the previous seven months. In the next, the patient had been

ill ten weeks of pleurisy, and had had hæmoptysis. Finally, in the third patient, the disease had lasted for three months.

As far as our cases go, therefore, they prove that youthfulness on the part of the patient, and early puncture, give more favourable results than the contrary conditions. The latter part of this opinion coincides with the suggestion made by a late reviewer.* I am satisfied that it is correct.

Under what circumstances should the operation be performed?

1st. There cannot be a doubt that it should be performed in all cases, either acute or chronic, in which there is dyspnœa sufficient to threaten death.

2d. I believe that the case of the little child about whom I was consulted in 1849 (*ante*, p. 323), proves that the operation should be performed where the pleura is *distended* with fluid, even if the dyspnœa is not permanent, but only paroxysmal, the patient being in the interval comparatively easy. Life might have been saved in that case, if the puncture had been made; but the little patient seemed so well, that we decided to defer it till a more serious symptom should occur. It will be remembered that that very night the patient died in a sudden attack of dyspnœa.

3d. I think that we ought to operate in a somewhat chronic case, where these paroxysms occur, even if the chest be only partially filled with fluid. I saw a man this spring who had been ill about three months, and had evidence of fluid filling one-half of one pleural cavity. It was thought best to try remedies before puncturing. In three or four days, he suddenly expired in an access of dyspnœa.

4th. In all *acute* attacks, where the remedies employed do not seem to produce ready absorption, the operation should be performed. Dr. Hamilton Roe says that three weeks is the longest time we should allow the fluid to remain in the chest.†

5th. In all effusions, where one side of the chest is full and distended with fluid, I shall advise it, even if there be no great dyspnœa or other serious symptoms; *a*, because it is rare for one having a pleura *distended* with fluid to get well; *b*, because the operation can do no harm; *c*, it may prevent a tedious illness; *d*, because it may prevent the development of tubercles; *e*, it will probably prevent future contraction of the chest; finally, because in that way an external opening and a harassing fistulous discharge may be avoided.

6th. Case VIII. proves that, although in a very acute case the puncture may not prevent the re-accumulation of the fluid, nevertheless, the operation may be of great service in relieving the prominent symptoms of dyspnœa, and helping on the more rapid cure. It may, therefore, become a question whether even a small quantity of fluid should not be removed within a week after the first attack of acute pleurisy. Time and future cases must

* British and Foreign Med.-Chirurg. Review, Oct. 1851, p. 301.

† London Lancet, vol. ii., 1844, p. 190.

decide this. Upon this part of my subject, I cannot refrain from quoting the remarks of the reviewer above alluded to. "The whole argument turns on the facility and safety with which paracentesis can be performed, and although the cases are not sufficiently numerous to allow us to recommend it as in all cases practicable and useful, yet they warrant us in stating that this operation is one of which practitioners have too much dread; and that, when skilfully performed, it may be practised with very little hazard to the patient, and with a result, in the majority of cases, that is satisfactory to the practitioner."

Objections to the Operation.—There are two classes of objections (viz., theoretical and practical) brought against the operation of paracentesis thoracis. I confess that they are very formidable, nay, insuperable, when applied to it as recommended in most books of surgery. That is, in fact, a barbarous operation, and I believe will be, ere long, regarded as such by every one. It leaves an open, gaping wound, through which rushes the external air with each movement of the thorax. But the modern European method by trocar and canula, as performed by Trousseau and Hughes, &c., and especially as it has been modified and improved by Dr. Wyman, is one of the simplest and safest of all operations. Still there are objections, theoretical and practical, brought against it. Let us consider, then, their value.

1st. It is said that the chest, being a bony cavity, cannot contract; *ergo*, you never can get out the fluid, or you do so at the risk of injuring the lungs; the objector forgets that the diaphragm and intercostal muscles prevent the thorax from being a bony cavity, and do allow of some contraction. Still further, by means of the suction-pipe, we draw out the fluid, and thus form, perhaps, a vacuum in the pleural cavity. The compressed lung dilates; the other lung likewise admits more air and crowds into the empty space.

But, 2d, the objector adds, by forcibly compelling the lung to dilate, you run the risk of seriously injuring it. How do you know this, save by experiment? Now experiment proves that nature always gives us notice, by the suffering of the patient, how far we may go in the operation of suction. I have myself operated twenty-three times, and Dr. Wyman has done so many more times, and in no single instance has any permanent evil resulted from this cause. We have always desisted the moment any complaint was made by the patient.

3d. It is said you cannot draw out all kinds of fluid. Very true, there may be such cases, I have met with them; but, I think, they will be less numerous as we become more accustomed to the operation, and it is done more properly. Besides, we can always, if necessary, have recourse to the old operation, if the trocar fails.

4th. But you will let air into the pleura. This, to some minds, is a serious theoretical bugbear. The admission of a small quantity of air does not necessarily cause trouble, unless it be frequently repeated, as in cases of pneumo-

* London Lancet, vol. ii., 1844, p. 301.

thorax, and of puncture of the thorax, according to the old operation. I have seen air accidentally *pumped into* the chest, instead of fluid being drawn out! And this caused no injury. The patient never knew of it by his own sensations. I do not believe it excited any inflammation. I am not alone in this opinion. Other operators believe the same; for they have observed the same accident, with similar results attendant thereupon.

5th. You run a great risk of exciting pleuritis by the puncture of the delicate pleural membrane. It is a sufficient answer to this objection that, at the autopsy of cases in which persons have died from other diseases, after a puncture with a fine trocar, no evidence of inflammation from that cause has manifested itself. Case I., given above, also proves it, by showing a simular non-purulent fluid drawn out on two successive operations. Dr. Wyman has noticed this frequently. I have never known pleuritis to ensue.

6th. You may injure the lung, or strike some other important organ.

Very true; but, 1st. I deny that a puncture of the lung is so very dangerous. It has been done. It was done in a case, as Dr. Wyman believes, under Dr. W.'s care. I have done it. I have seen another do it, and, moreover, use the suction-pipe while the trocar was in the lung. In no case has any evil resulted. The sputa were, in one case, slightly tinged with blood soon afterwards, but no unusual pain or distress resulted to the patient. But, 2d, these are exceptional cases. If our diagnosis be conscientiously and thoroughly made, we need very rarely injure the pulmonary structure. If we injure any other organ, it will generally be owing to our own carelessness.

7th. The intercostal vessels or nerves may be injured by the trocar.

This is possible, but not probable. 1st. It would be difficult, in fact, to strike and seriously injure the artery, because the trocar is so small that a small artery would most probably glance aside. 2d. The spot for the operation may be chosen where the vessels are the most minute. 3d. The operator, of course, will thrust the instrument as near to the upper edge of the rib as is possible. 4th. Finally, among all the operations performed within the past eighteen months in Boston and its vicinity, no serious result has happened to the artery, although, in one case, I observed some slight and temporary hemorrhage after the withdrawal of the trocar.

8th. One objection brought against the operation is the following, viz.: That all cases of chronic pleurisy will get well after a time, unless the disease be dependent on more serious lesion of the lungs, or other remote organs. In answer, I would say that, according to my experience, in part already given above, it is not true that a person affected with chronic pleurisy as an idiopathic disease will eventually get well. He may die, as we have seen, in various ways, which result a puncture and extraction of the fluid may prevent. But, still further, is it of no use to shorten the disease by months? Is it of no service to prevent fistulous opening, and those terrible distortions of the chest consequent on the cure of long pleurisy? Moreover, suppose that tubercular or other disease exists, is it of no service to raise, as was done in

Cases II. and VII., our patients from their bed, to give freedom of breath, and to actually lengthen life?

Again; I believe that this operation will be used with advantage in *acute* disease, and may, likewise, shorten *its* course. Case VIII. shows this, where the patient, on the twenty-third day, was up and preparing her dinner, and the effusion subsiding. Case VII. is a still more striking example of this; *i. e.* if we regard the pleurisy as having commenced when the pain in the side began. If this be so, then the cure was complete in a very few days after the operation.

9th. Finally, some object to the operation because of the uncertainty of diagnosis. You may operate in a case of cancer of the lung, or gangrene, or some other disease than pleurisy.

I can conceive of such an error being made in some very rare cases, but I do not believe that such cases will be likely to happen very often; and, moreover, as I have already said, I think that a slight puncture of the lung with a small trocar is of very trivial moment. We may, therefore, very justly put aside this objection as one of little value against the operation.

Diagnosis of pleuritic effusions.—Strictly considered, this question does not belong to this paper; but I feel that its great importance allows me to treat briefly of it. I pass over the rational signs; for, although of the greatest value in the diagnosis, prognosis, and treatment, they have no bearing upon the special object we have now in view. Let us trace rapidly the various physical signs.

Inspection.—This should never be neglected. When the chest is full of fluid, you will find an immobility of the affected side, and a general roundness of the whole of it. At times, however, there may be a local swelling, and especially is the breast liable to be unduly prominent. In one or two instances, this was so great as to suggest the idea of some lobulated organic disease, rather than a simple effusion. Mr. McDonnels (*British and Foreign Med.-Chirurg. Rev.*, July 1845, p. 248) has apparently observed the same facts, and has moreover found some cases in which there was a pulsation, causing the idea of aneurism to be suggested to the mind of the observer. The pulsation was, however, caused by the dislocated heart pressing strongly against the parietes of the pleuritic abscesses. I have never seen anything like this; but I would suggest that, in such a case, the flatness, that would undoubtedly exist at the back of the chest, and the ægophony, would enable us to come to a tolerably certain diagnosis. I have never seen the intercostal spaces *prominent;* they have usually been on a level with the ribs; but sometimes the spaces were even *narrower* than those of the other side. It seemed as if the healthy side expanded itself to the utmost in order to do its double work.

Palpation teaches us many things that inspection likewise displays. In large effusion, there is often exquisite tenderness of the whole breast and side, which usually disappears after the removal of the fluid. The natural vibration

of the voice, felt by the hand placed on the thorax is lost at the side containing the fluid.

Auscultation.—The respiratory murmur may be diminished, or destroyed, or made tubular by an effusion. When there is a large quantity of fluid, and the lung is compressed, the murmur is generally almost, if not wholly absent, especially in the lower or back parts of the chest. At times, however, a tubular sound is heard. This is most distinct about the angle of the scapula. Even in this case the lower two or three inches have scarcely any respiratory murmur. This fact usually distinguishes pleuritic effusion from pneumonia, in which the bronchial respiration is more extensive than in pleurisy. Of course, when there is not a complete compression of the lung, the murmur must be heard somewhere, and most clearly at the apex. Generally, it may be said that the murmur in the lung, even when partially compressed, is less throughout the front and back of the affected side. This fact likewise separates effusion very clearly from pneumonia, or any malignant disease of the lungs. The usual absence of râles helps in the diagnosis of pleurisy. This, however, is not a certain proof, because phthisis may exist, and the râles will in that case be heard at the top of the lungs. This was the case in our 7th observation. Pneumonia, or severe bronchitis may, very rarely, exist with pleuritic effusions, and they will present their characteristic râles lower down in the lung. In such a state of things, we must have recourse to other signs.

The *voice* is always altered. It may be less, or it may be louder, or it may be modified ægophonically. Either of these alterations, combined with other signs, I consider important. True ægophony is rare; and, when it exists, I should consider it an almost certain proof of the existence of a pleuritic effusion; but I have no confidence that it will show the amount of that fluid.

Percussion.—This is the most perfect means we have of detecting the existence of a fluid. We recognize a fluid by its perfectly *flat* sound, and the inelastic sensation given to the finger. Gangrene of the lungs may produce a similar sound, but it is limited in extent, and rarely shows itself (by percussion) at the base of the lungs. I never had but one case of pneumonia at all resembling pleurisy in its peculiar dulness of sound. Cancer of the lung may cause equal flatness, but it is not apt to be uniformly distributed; hence we often obtain a clear sound below the level of a part that is flat.

But the *experimentum crucis* which, when it occurs, absolutely proves the existence of a fluid, is the change of sound according to the change of position of the patient. When the pleural cavity is full of fluid, this trial is of no avail; because, in whatever posture the patient may be placed, all parts must necessarily be flat. A similar result occurs when there are adhesions confining the fluid. Neither of these causes is of common occurrence; the former, however, is much more likely to occur than the latter.

Displacement of the Organs.—Examination should be made upon this point in all cases. When the effusion is in the left side of the chest, this

examination affords us an almost certain sign of it, for we shall find the heart more or less dislocated to the right, even beyond the sternum.

In three of our cases (I., III., and VII.), this state of things was quite manifest. The undue projection of the liver and spleen from under the cartilages of the ribs, whether due to actual dislocation or to enlargement, as suggested by Mr. McDonnell,* is of minor importance as a diagnostic sign.

Is it possible, before operating, to determine the quality of the fluid contained in the chest? I think not; although we may suspect it. In general, it may be said all effusions consequent on organic diseases, not contiguous with the pleura, are of a non-purulent character. In pleurisies proper we cannot decide, *à priori*, whether we shall find pus or other fluid. The more intensely inflammatory the general symptoms are, the more must we anticipate pus. The chronic nature of the complaint affords no criterion by which to judge, inasmuch as sometimes a perfectly clear fluid remains for months. The presence of hectic paroxysms, which I formerly thought nearly pathognomonic of a purulent condition, I have learned to think of little value in the solution of the question. After the operation has been more frequently performed, we may be able to answer it more satisfactorily.

Dr. Hamilton Roe, in the paper already alluded to, believes that a prominence of the intercostal spaces is one proof of the purulent character of the fluid contained in the chest. Others, however, do not agree with him in this particular. Our Case IV. proves Dr. Roe to be wrong, if he lays down this as the undeviating rule.

Mode of operating proposed by Dr. Wyman.

He uses an exploring trocar, and one of the smallest kind will answer. It is well to have the instrument a little firmer than those usually prepared for simple exploration; for twice I have seen those small ones broken off within a very short distance above the surface of the skin. And, although this accident caused, in neither instance, any serious trouble, another puncture was necessary in both cases.

In addition to the trocar, and an important item in the success of the operation, is the suction-pump, applied to the canula on the principle recommended by Guerin and Higginson. Guerin has an apparatus much less convenient than that which I have used, which consists of a pump without valves. (See figure, page 350.) A solid brass cone is ground so as to turn in a perfectly air-tight manner within a brass cap. In this way, by a series of apertures, we can draw up the piston and fill the pump; and then by a simple turn of the cone, about 90 degrees, within its cap, and pressing down the piston, the whole contents of the barrel are discharged from another aperture. The operation of suction may thus be repeated rapidly, and without any removal of the pump or turning of stopcocks, as proposed by Guerin.

* Dublin Journal, March, 1844, and British and Foreign Med. Rev., vol. xx., 248.

Accident, and a desire to accommodate a patient, led me to employ a slight modification of Dr. Wyman's plan. I observed that when the pump was fitted directly to my canula, I could not help frequently jerking the instrument in such a way as to cause suffering to the patient. By using a strong gum-elastic tube which will not collapse, and which by one extremity screws into the pump, while the other is fitted by an air-tight brass cap very closely to the canula, all trouble is avoided. Moreover, by this arrangement, I am enabled to allow the patient to be placed in many positions which would be very inconvenient, if not impossible, if I did not use it.

Where should the puncture be made?

It is evident that it will be wise to introduce the trocar as low down as possible, consistently with the safety of important organs within the chest or abdomen. The spot usually chosen by Dr. Wyman and myself is just under the lower angle of the scapula, between the seventh and eighth, or eighth and ninth ribs. This point is chosen, first, because it is easily reached; second, the muscles covering the thorax at this part are thin; third, the intercostal vessels are as small there as elsewhere—possibly they may be smaller. The intercostal space is sufficiently large to easily admit of the passage of the trocar. At times, I have operated more under the axilla, the patient's arm being raised by an assistant; but some might fear to injure the heart if operating on the left side. Assuredly, we should be careful of puncturing under the left axilla, unless there is a large effusion which has dislocated the heart to the right; and, if such be the fact, there is no danger, unless the trocar be forced into the thorax much farther than is needed. The same objections cannot be made to operations upon the right side. With a reasonable degree of caution in our diagnosis, and if, when puncturing low down, we raise the point of the instrument instead of depressing it, we shall avoid the diaphragm, liver, or spleen.

Position of the Patient during the Operation, Mode of Operating, &c.—If possible, I prefer to have the patient sitting sidewise in a chair, or astride, with his face towards the back of it. If he be too feeble to rise, he may be in a semi-recumbent posture reclining on the bed. In either case, it will be well to let an assistant support him. The position first assumed I have generally allowed him to retain; though some of the European operators advise a change, so as to allow the fluid to flow to the point of puncture. This will rarely be necessary.

Some advise that the skin should be slightly incised with a lancet before puncturing. I have never found this to be necessary; but, having carefully examined the best point at which the trocar should be introduced, I press the forefinger of my left hand deep into the intercostal space, and then, using that as a guide, I quickly plunge the trocar through the parts, as near as possible to the upper edge of the lower of the two ribs. The resistance is at

times considerable; but the sensation produced by the passage into the pleural cavity is quite easily recognized. I then withdraw the trocar, and, if no fluid flows, I introduce a probe through the canula, and explore the cause; and, if necessary, I force the tube further in. Sometimes, the false membrane on the pleura costalis is raised on the point of the instrument, and we escape that obstruction, by thrusting the instrument farther in. At times, however, even this is insufficient, owing to the purulent or coagulable nature of the fluid. In this case, suction may be applied, and if blood alone flows, or if any suffering is caused to the patient, another opening must be made, or the operation be given up, or the old method resorted to. If the fluid, as is usually the case, flows freely, the tube and suction-pumps should be fastened to the cap of the canula; and if possible, it should not be removed therefrom, until the operation is over, and the canula drawn from the chest. An assistant should support the canula, and keep it wholly quiet; much suffering to the patient is thereby prevented. If before much fluid has been withdrawn the canula seems to have become clogged, the suction may be removed and the tube may be probed; but this is to be avoided if possible.* At the termination of the operation, *i. e.* when a large quantity has been withdrawn, or the patient complains of severe distress with each attempt at suction, we should carefully withdraw the tube. No dressing, or the slightest compress only, will be needed, and if any pain occur, it may usually be overcome by mild opiate applications.

The following figures will afford an idea of the instruments employed by myself. They are represented two-thirds of their actual dimensions, except that the barrel of the pump is given merely by its two extremities, in figures 1 and 2. The barrel is eight inches long from *a* to *b*.

Fig. 1. *c*, strong handle. *d*, piston-rod, with a small wire soldered to it, so as to prevent the turning of it, without moving the whole barrel. It would be better to have it square.

Fig. 2. *e*, termination of the barrel in a cone, which plays very closely in a cylinder, *f*, which surrounds it, and to which it is fastened by a large nut, *g*. *h* is a screw to which a tube may be fastened, in case the instrument is to be used as a stomach-pump.

Figs. 3 and 4 show in detail the cone and its investing cylinder.

Fig. 3. *i*, a wire which, by striking against the notches near *s* and *o* (Figs. 2 and 4), prevents the contained cone from moving except within certain limits. *k*, aperture in which the elastic tube is screwed previously to fastening it upon the trocar for the operation. It is on a level with *n* (Fig. 4), which communicates with the interior of the barrel. From this we see that, if *i* be brought up to the notch *o* (Figs. 2 and 4), the pump will be prepared for suction through *k*. *l* and *m*, two apertures opening inside of the investing cylinder, and communicating with each other by means of a passage-way in the walls of the cylinder. From their position relatively to *k*, it will be perceived that, if *k* be moved, or what is the same thing, if the cylinder be held

* In one case in which I have operated since this paper was written, I punctured twice the same day. My reasons for doing so were these: I had punctured under the scapula, and drawn off about twelve ounces; when the fluid, of which I was satisfied there was still a quantity, ceased flowing, and no amount of motive power could make it flow. I then introduced the trocar one or two inches higher and in front, when immediately the water escaped, and fifteen ounces more were taken away. I may add that neither puncture caused suffering.

firmly, and the barrel with its terminating cone turned so that *i* shall rest at *s* (Figs. 2 and 4), the two apertures *l* and *m* will correspond to *n* and *p*, while *k* will be closed. By this change, a continuous tube from *a* to *b* is made, and the fluid drawn up into the barrel may be immediately discharged. This operation may be indefinitely repeated.

Fig. 1.

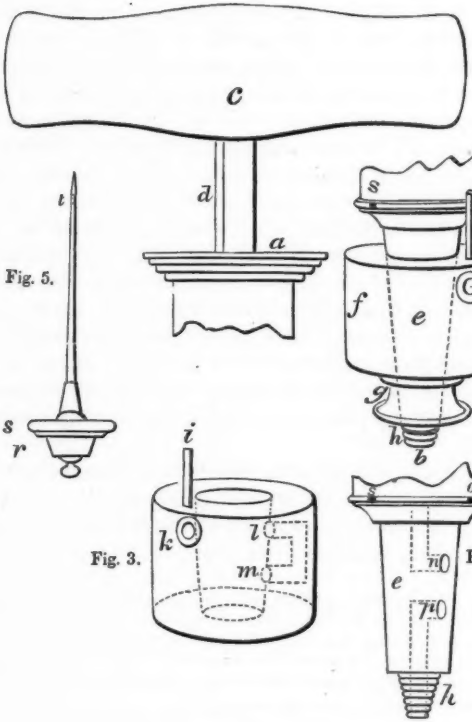


Fig. 5. The exploring trocar and canula (two-thirds of the actual size), *r*, a cap of brass, ground smooth for insertion into the elastic tube, in a perfectly air-tight manner. *s*, solid arms of the same material, for the more easy and firm management of the instrument. *t*, apertures in the side of the instrument, through which a fluid can be drawn in case the end of the canula be obstructed.

ART. IV.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

June 23.—*Case of Unusual Dislocation of the Hip-joint.**—Dr. J. M. WARREN related the case of a young man, about twenty years of age, who had a bundle of hay to fall on him from a loft, striking him on the outside of the thigh, so far as he could describe it, and forcing him to the ground. On being taken up, it was discovered that the right hip-joint was dislocated. Dr. W. was requested to see him by his physician, Dr. J. F. W. Lane. The patient was lying on his back, the thigh sticking out laterally from the trunk, and forming a right angle with it. At the spot usually occupied by the trochanter, a deep hollow existed. The head of the bone could be felt on the ascending branch of the ischium, and might at first easily be mistaken for the tuber ischii. The patient would not allow any examination to be made until he had been placed under the influence of ether.

The pulleys being adjusted, on the first effort at traction, the head of the bone slipped around the socket, and produced the appearance of a dislocation into the ischiatic notch. The force of the pulleys was now increased, and the head of the bone was quickly brought over, and went into its place with a distinct report. On the extension power being removed, the limb was found to have recovered its proper length and motions. Dr. W. said he had seen a somewhat similar case a few years since.—A gentleman, 60 years of age, fell from the third story of his store, alighting on his knees among some bales of goods. The effect was to produce a displacement of the right thigh, attended by phenomena like those observed in the above instance. The patient was etherized, and the limb replaced by manual force without the aid of pulleys, the system being depressed at the time from the effect of the accident.

August 11.—Dr. J. M. WARREN reported the following case of *Uncommon Tumour of the Mons Veneris*, and showed the specimen :—The subject of this was a patient of Dr. Alexander, of South Boston, forty-two years of age. The tumour commenced some years since, and was perceived, just after her confinement, in the left groin. It gradually made its way into the labium of that side, and, as it enlarged, involved the mons veneris, dragging it down, together with the integuments of the abdomen, and finally formed a large pendulous tumour, hanging between the limbs, covering the external organs of generation, and causing much pain and inconvenience to the patient.

On removal, the tumour was found to be fibro-cellular, of very firm consistence, the cellular tissue surrounding it and entering into its composition, being infiltrated with serum. The weight of it was two pounds and two ounces.

Oct. 27.—*Affection of Peyer's Glands in Acute Infantile Diseases.*—Dr. JACKSON reported the case of a child, two years old, who died in about twelve hours, having been convulsed most of the time, and insensible during the

* This and the following case are reported out of date, having been intended for the January No. of the Journal. The manuscript could not be prepared in season.

W. W. M.

intervals; it could not be made to vomit, and had no dejection, though active enemata were used. The child was previously healthy, and no cause could be assigned for the attack. Peyer's glands were considerably developed, somewhat softened, and many of them were dotted over with deep-red points, as from minute ecchymosis, the intervening surface of the patch being not at all reddened. The solitary glands were also developed throughout the small intestines, and towards the lower portion some of them were ecchymosed like the Peyer's. Besides this affection of the glands, there was found extensive cadaveric softening of the stomach, so often observed in cerebral cases; with an extension to the œsophagus, and perforation into the left pleural cavity. The head and all the organs of the thorax and abdomen were carefully examined, the alimentary canal being opened throughout; but nothing else was found except a simple volvulus, this being also not unusual in the cerebral affections of children. The intestine was shown.

In connection with this case, Dr. J. referred to another which he had reported to the Society in October. The child was three years old; it had at six A. M. an active convulsion, and at noon a second, followed by stupor, with twitching of the limbs for three or four hours. In the evening, there was heat of skin, with excitement of the mind, and twitching as before, and at ten P. M. it died. It had been previously healthy, and no cause whatever was known for the attack. Peyer's glands were very much thickened and irregular upon the surface, but not at all softened nor reddened. The solitary glands also were quite numerous and much developed in the small intestine, but far less so in the large. As in the first case, each of the three cavities was thoroughly examined, but nothing else was found.

Dr. J. remarked that for many years past he had been in the habit of observing an affection of the intestinal follicles in the convulsions, exanthemata, croup, and pneumonia of infants and young children; four cases having been met with during the last eight weeks, exclusive of the two above detailed. The fact is alluded to in the printed Catalogue of the Society's Cabinet, and, from the frequency of its occurrence, must be sufficiently well known; yet he had never seen it noticed by any writer until recently, when he met with it in Rokitansky's *Path. Anat.* (Sydenham Soc.'s ed. vol. ii. p. 89), from which he read an extract. This author speaks of the "swelling" of the follicles, the character of the deposits, the formation, though rarely, of an ulcer, &c.; but he says nothing of redness. Dr. J., on the other hand, has found redness of Peyer's glands as the principal characteristic of the change in question, though often but faintly marked; swelling, in many cases, had scarcely existed, if at all; and of ulceration he had never seen the slightest trace. The redness was diffused over the greater part or whole of several of the patches; the case above reported being the first in which he remembers any appearance of ecchymosis. Simple swelling, Dr. J. has met with under such circumstances that he has heretofore been disposed to regard it as being hardly an abnormal condition, and as only an accidental circumstance, when observed in infantile disease. In the second of the above cerebral cases, however, it existed without redness. The pathological value of the redness of Peyer's glands, moreover, Dr. J. is inclined to question, having found it several times in persons dying suddenly, whether from accident or disease, but in whom the process of digestion was going on, redness of the mucous membrane of the stomach being sometimes found at the same time.

Nov. 10.—*Anchylosis of the Left Thumb.*—Dr. Bowditch introduced a miner from California, the last joint of whose left thumb is firmly anchylosed.

The whole thumb is much smaller than the other, many splinters of bone having come away. The affection came on while the patient was washing for gold. He states that many miners are similarly affected; some get the disease in the spine and become lame, so as to require crutches.

Nov. 10.—*Eburnation of the Cartilaginous Surfaces of the Knee-joint.*—Dr. H. J. BIGELOW showed the specimen, taken from a negro man who had been run over by railway cars. One leg was crushed; from the other, the foot was cut off clean, as if chopped off. The patient, eighty-four years old, suffered amputation in both limbs; in one above, in the other below the knee. Death ensued in two days. One knee-joint showed a grooved ivory texture upon its surface.

Dr. B. remarked that this disease has lately been described by Deville, of Paris, under the title of *arthrite chronique sèche.* 1st, the cartilage is *modified* in its structure, assuming a *velvety* appearance; 2dly, foreign bodies are observed in the joints; 3dly, deformities occur about the joints; in the thigh, the bone often *sinks* so much at its head that the limb becomes greatly *shortened;* 4thly, eburnation [*éburnéation* of Guérin] of the tissues, as in the present case; all which appearances, before recognized, have been, by the above writer, traced to a common cause, sufficiently indicated by the name assigned to it, viz., "dry chronic arthritis."

November 10.—*External Use of Chloroform.*—Dr. CHANNING read the following paper on this subject: "I have made some trials of the external application of chloroform. It has often been entirely successful in the present relief of pain. In some, the relief has been permanent. This use of the remedy of pain is not new. It has been said that a free application of chloroform to a part on which a surgical operation is to be done, will render such part insensible to the violence done it. Thus, immersing a finger in chloroform will prevent the suffering which accompanies the deep cuts which some of the diseases of this member require, and which are described as exquisitely acute. These statements rest on good authority. In such use of chloroform consciousness remains unimpaired, the brain not being at all affected by it.

Having frequently applied chloroform externally for the relief of pain, in many and various cases, and often with speedy, and generally with continued relief, I propose to present some of them to the Society:—

CASE I. 1848. Mrs. ——, about 30, has children. For some years has had symptoms of uterine disturbance. Among these, have been suffering on intercourse, leucorrhœa, tumoral pains in and about the pelvis, always increased by walking, and which, except pain in the spine, are relieved by lying down. For the uterine conditions the usual means were faithfully employed, and her complaints there were entirely and permanently removed. The dorsal trouble, however, was as great as ever.

For this I recommended the external application of chloroform over the whole course of the spine which was involved in the disease. The effect was immediate and complete. I saw this patient, a few days since, Nov. 1851, and found her well in regard to the back, and speaking of herself as very well in all respects.

In this case, the pain in the spine was doubtless the result of the reflex function, the womb being the original seat of the malady. But when the uterine affection was relieved, the sympathetic dorsal difficulty remained, and only yielded to the use of chloroform. The quantity used was an ounce.

CASE II. Mr. ——, aged 22. A very feeble man in appearance; very

thin in flesh; pale; and an almost constant sufferer from headache. This pain occupied but a small part of the head are, and most frequently the right temporal region. It was accompanied by constant nausea, frequent vomiting, great prostration of strength, and demanding for its present relief firm pressure over the part affected.

The last attack, which happened a few weeks since, I applied chloroform to the seat of pain. A few drops were applied by means of a handkerchief. The immediate effect was redness of the skin and a tingling sensation in the spot. The pain was at once relieved. He raised his head from a friend's shoulder, opened his eyes, looked round, and expressed his utter surprise and deep pleasure at the entire relief which had followed the use of such apparently simple means. He called on me the next morning, and reported himself perfectly well. I have not been called to him since.

The relief in this was *sudden* in its occurrence, as it had been in others. It has not been less permanent on that account, or in such cases. It has acted at once to remove pain, and with a rapidity which distinguishes the relief entirely from that which follows etherization by inhalation. The brain does not seem to have anything to do with the matter. Local pain is abolished, and at once; and the nerves have no story of suffering to tell to the brain. The sentinel is at his post, but his function is not needed. The part does not lose its natural sensibility at all. On the contrary, it feels the tingling, the irritation of the chloroform, just as distinctly as at first. Nothing has been lost of natural power and healthful function. All that has happened is this: the pain has ceased, and the patient is well.

Case III. 1851. Mrs. ——, aged 36. Has long suffered from uterine disturbance. The most exhausting and annoying symptom was leucorrhœa. This was a perpetual drain, and made her exceedingly uncomfortable. I was occasionally consulted in this case; but, as her general health continued tolerably firm, no systematic attempt at recovery was thought necessary by the patient. She became pregnant, and supposed herself between two and three months advanced in that state, when hemorrhage and severe uterine pain occurred, on account of which I was desired to see her. She had lost a great deal of blood before I saw her. I found her perfectly blanched—lips and whole face; skin cold; hands bloodless; faint; almost pulseless. Various means were used, and the hemorrhage was stopped. I considered her case, however, so pressing, that I passed the whole day in the house. She now began to complain of pain in the back. This had exacerbations in the night, becoming too severe to allow of sleep, and continuing three or four hours without mitigation. For this I recommended chloroform, which was applied by means of a handkerchief, and with excellent results. After three applications, on as many days or nights, the pain ceased, and has not now, at the end of some weeks, returned.

Case IV. Mrs ——, about 40. Last child, thirteen years old. I was called in consultation in this case, because of vomiting, attending pregnancy, of about three months' standing. The vomiting ceased under treatment, and food was taken in sufficient quantities, and was well borne by the stomach. A comatose state supervened, which increased, with entire abolition of mind, and death was its consequence. The termination of cases of fatal vomiting by coma has occurred in many instances which have come under my notice or knowledge. I do not, however, recollect a case in which apparent recovery has been followed by coma ending in death.

This case is reported here, because of the use of chloroform for one of its symptoms. This was pain in the back, in the course of the spine. It was

very severe, taking the lead, in distress, of all the rest. For this pain I prescribed an ointment, if so liquid a substance as was produced by the union of lard and chloroform deserves the name. It was applied twice or thrice a day, and with most excellent effects, the pain entirely disappearing. It was used in the same way in the first of these cases.

Case V. Mrs. ——. Has had four premature labours; the first at about five months, the fourth at about the eighth. They were all still-born, or neither of them lived over an hour or two. The fifth pregnancy was terminated at the full time by the birth of a living, healthful male child, on the 17th October, 1851. I visited her for the usual time after delivery, and left her in rapid progress towards perfect recovery. I was called to see her on the 27th Oct., and found her apparently very ill. Pulse rapid; skin hot; face flushed; much pain in head and in both breasts, making all attempts at nursing absolutely agonizing. A thick eruption had appeared over the whole chest. Upon examination, the breasts were found exquisitely sensitive, not bearing pressure at all. Sufficient pressure, however, was made to enable me to ascertain that there was no unusual hardness, or, in short, any other sign of disease in either organ. The pain was confined to the skin, and seemed to invole its whole tissue. The eruption proved to be a very full crop of sudamina of unusual size, resembling exactly an exaggerated form of the same kind of eruption in typhoid fever. Various means had been used before my visit, but without any good effect.

I recommended chloroform, and with the best effects. I regret I had not used it in combination with lard or rose ointment, both of which I have used, and for the reason that it may in this way be more extensively applied, with more continuous benefit, and with less of the unpleasant tingling which so generally accompanies the uncombined substance.

On what did this aching pain depend? It resembled that which at times makes *shingles* so very distressing. Was it owing to the eruption? I have never known the skin in sudamina to be complained of as the seat of pain, and I have examined it when covered by this eruption after a manner to have produced pain had morbid sensibility existed. In Mrs. ——'s case, the pain was persistent, being much aggravated by handling, though never so gently. The pain in this case subsided, under the use of chloroform, long before the eruption disappeared.

Case VI. Mrs. ——, aged 25, married very young, and had a premature labour within a year or two afterwards. I was desired to see her, October, 1851, on account of an enlargement of the abdomen, on the left side, and for various signs of ill health. The tumour was found to be an excessively enlarged spleen. It filled the left hypochondrium, extending forward to the epigastrium, and downward to Poupart's ligament. Its anterior boundary was the linea alba. From this point or line it extended laterally and backward, filling accurately one whole side of the abdomen. She has been always regular in regard to the catamenial function, with the exception of the last two periods. Nausea, vomiting, and other unusual and disagreeable feelings have led to a suspicion that pregnancy may exist. She has recently taken a fatiguing journey of three days, and has suffered much since. The pain has been most troublesome in the head, and in the seat of the tumour. Diarrhœa and flatulence, with general anasarca, involving the face and head, are also present. Chloroform to the forehead and to the seat of the tumour has given her much comfort, more than has been derived from any other means used.

Case VII. Mrs. —— was delivered of her second child, a daughter, December 25th, 1850. Since that event she has been liable to diarrhœa, which, however, has not impaired her general health. She has long been

annoyed by a spasmodic catching of her breath, almost resembling hiccup, but producing more general agitation of the body than does that. After her last confinement, this affection was for some time unusually troublesome.

I was called to see Mrs. ——, October 6th, 1851, and found her apparently very ill. She was hot; feverish; pulse rapid; severe pain in head, which it was attempted to relieve by bandage, and different washes; vomiting large quantities of watery fluid, colourless, having floating in it masses of a dense, white substance, resembling coagulated milk. No milk has been taken for some time. Copious diarrhœa, with very severe, intermitting pain around the umbilicus. No sleep at night, and for a week or more has suffered many of present symptoms. Means were used to check vomiting and diarrhœa, but without any useful result, and I determined to try chloroform externally. Its effects were most grateful. The head, stomach, and bowels became easy. They were, in short, relieved of all their trouble. This was in the evening. At my morning visit, I found Mrs. —— up and dressed, nursing her child; and, except weakness from so much suffering, and forced total abstinence, in her usual health. I forgot to mention above, that, during this very severe attack, the catching respiration revived, as it does, I was informed, whenever she is at all indisposed, and continued till she recovered.

Case VIII. Mr. ——, of strongly-marked nervous temperament; very *impressible;* an excellent mesmeric subject. I was called to this gentleman on account of violent pain in the head, and to which he was very liable. I found him in bed. He could not sit up at all, and any noise in the room, or house, or jarring of the furniture, increased the pain to agony. Pressure to the head gave some relief. While I was examining his case, he said he could bear his sufferings no longer; that he must get up, and walk round the room; do anything which might afford some relief. He was hot; skin dry; pulse rapid. I sent for leeches; but before they could be got, and because of the increased suffering, I made a free application of sulphuric ether to the forehead. The relief from its use was soon apparent. It was strongly expressed, until, worn out by his long agony and sleeplessness—and now relieved—he fell asleep; and, after long and perfectly quiet rest, awoke without pain, and next day went to his business.

The relief here was quite as striking as from chloroform. A good deal of ether was used, indeed, and the patient may have found some of the relief he experienced in the unavoidable inhalation of the ether vapour. This was not at all the case in the instances in which chloroform was applied. The quantity was very small, hardly damping the handkerchief beyond the limits of a twenty-five cent piece, and with the wet surface close to the skin, and often under the bed and other clothes. This case is reported, not on its own account only, but also to allude to another mode of employing local etherization. A professional friend of the highest reputation amongst us, and very cautious in forming opinions concerning the direct effects of remedies, once told the writer that he had been much gratified with the agency of sulphuric ether in procuring sleep in cases in which he was desirous to avoid the employment of opiates. His method was gently to have the forehead and face wiped with a cloth damped with sulphuric ether, and very often most grateful sleep followed this use of it.

Case IX. Mrs. ——, aged 19, in seventh month of pregnancy. Of excellent health before marriage, she has suffered, in an unusually severe form, the signs and diseases of pregnancy. Vomiting occurred very early, and such was its excess that it seemed impossible that she could live through its ordinary continuance. To this succeeded ptyalism, which has been quite as

uninterrupted and severe as was the vomiting. She is constantly in bed, having no power to sit up. Violent headache; pain in abdomen; in back; in short, pain occurring in all possible localities, has made her life, for months, wretched. Having tried the ordinary means of diminishing these troubles, I have at length applied chloroform. The pain in the head has entirely ceased since she began this course. All other means are omitted. Pains elsewhere are sensibly diminished. She has no nausea, no vomiting, and the ptyalism is less. She bears milk, in small quantities, quite well on her stomach. As the pain in the back and abdomen continues to recur when the effects of the chloroform have passed away, I have to-day, November 10, 1851, directed an ointment of chloroform, two drachms to an ounce of lard, to be applied to the spine and to the epigastric region.

Case X. This case occurred in the person of the writer. The disease was toothache. It was in one of its severest forms; had continued many hours; extended to the temple and lower jaw, and made the least application to it, a touch merely, exquisitely painful. Chloroform on a handkerchief was applied to the third branch of the fifth pair, where it passes out upon the face, and to its ramifications, and especially to that part of the cheek which was over the diseased tooth. The usual sense of tingling and burning was experienced, and the skin became slightly red. After a few minutes, a most grateful sense of relief was experienced. The pain disappeared as entirely as it does after an aching tooth has been drawn. No tenderness remained. The tongue or finger could be freely pressed against the tooth, and without producing any uneasiness. Chewing was possible and grateful. Cold water gave no agony. It may be inferred that I have exaggerated the suffering. Said a patient to me once, to whom I had suggested the idea that she might be in error as to her suffering, "*Sir, I know by my feelings how I feel.*" I can say that what I have said of the pain, and of the relief from chloroform, need not to be questioned. I felt and understood both.

Relief continued for some time. Pain recurred, but it was at once treated as above, and was at once relieved.

Remarks.—I have written off these cases that I might report them to the Society, because I think this method of using anæsthetics may often be useful. It is not on account of the novelty of this mode of application of chloroform that the cases are presented, for the suggestion of such use will be found elsewhere. They are read because they present a number of cases, of facts, in which it has been a purpose to afford relief by the remedy, and especially by a faithful trial of it.

Another reason: These cases are sufficiently numerous to furnish some basis for generalization. By adding to them, they may at length authorize the establishment of rules of practice, which may not only contribute to the comfort of the sick, but exert important influences over disease.

Again. This use of chloroform is perfectly safe. Not the least disturbance of system or organ has been produced by the external employment of this substance. Consciousness remains undisturbed. The pulse, breathing, temperature, are natural. The expression of relief is very striking. In other uses of chloroform, or ether, consciousness is more or less abolished, and we know nothing of the relief but what comes of absence of complaint. From its external use we learn at once the whole story of the comfort, the extreme pleasure which is experienced.

Again. I present these cases in the hope that others will be induced by them to seek for their patients' relief from other sources than those ordinarily employed, and which so often do little more than occupy a certain amount of

time in a self-limited disease. These cases show that we have the means of shortening this time, nay, of giving relief at once, and thus of anticipating recovery. I have used chloroform externally but once in acute inflammatory disease—puerperal peritonitis. In this case, after-pains continued until the fourth day from delivery, with retention of urine, and pain in the lower part of the abdomen, which broke sleep and produced extreme discomfort. This case was some miles from town, and I was attending in consultation. I advised a trial of chloroform to the part, and used it as above described. Its effect was not agreeable. The skin had been sodden with hot rum, brandy, hop-bags, &c., and had been made so tender that unusual smarting, tingling, and heat were at once produced, so as to make it necessary to remove the chloroform. There were recent leech-bites near the seat of pain, and these may have been irritated by the application. Should I again use chloroform externally in similar cases, I would combine it with some ointment, say rose ointment, in proportion of one or two drachms to the ounce of the ointment, and apply it on cloth, or, which would answer better, sheet or woven lint.

Has not our subject important physiological and therapeutic relations? The nerves, under ordinary circumstances and in their healthful state, convey at once to the brain morbid occurrences whenever or wherever such happen, and thus most important information is given of the state of the system, or of a part of it. So, when the body in every part of it is in health, the nerves communicate the knowledge of this fact to the brain and mind. The result of such agency is that consciousness of universal physical soundness—health—which constitutes the highest enjoyment of life. But chloroform, as we have seen and said, abolishes pain—we do not say cures disease—and, in this freedom from suffering, leaves it to the nerves to aid in such living processes as are themselves tending to the recovery of the diseased organ to health, and to aid the therapeutic powers of medicine. The mind remains ignorant of the state of the diseased part, so far as pain has given it knowledge of such state; but recovery is not thus delayed. We believe, on the contrary, it is hastened.

Of the mode of applying chloroform endermically, a word. A handkerchief fresh from the drawer, and a phial of chloroform, are all that is needed. Apply the handkerchief to the open mouth of the phial, and invert the latter so that the chloroform may wet a spot in the centre of the cloth. Do this two or three times, and then apply it to the seat of pain by moderate pressure and without friction. Let it remain till it is dry, and then wet and apply it again if need be. Ordinarily, the pain soon becomes less, and will even be found often to disappear entirely, with no further application of chloroform. Some redness is commonly produced, and some tingling or smarting. These, however, disappear when the handkerchief is removed. To prevent evaporation, and especially to prevent inspiration of the chloroform, always cover the cloth which contains it with another dry one.

[At the meeting succeeding that at which the above paper was read, Dr. Channing asked that he might make an amendment by addition.

He said that a question arose, after his paper was read, whether chloroform could be relied on for relief of pain by its external application. Dr. C. replied that the skin, of all tissues, is the most liberally supplied with nerves, and that as chloroform acts wholly upon and through the nervous system, the patient, under its fullest action, was deprived of consciousness by its direct action through the nerves upon the brain. The action of chloroform, then, through the skin, was precisely the same as through the lungs, with this difference,

that, when introduced by the latter organ, such is the vast extent of texture to which it is applied, consciousness is lost as well as sensibility.

It was further objected to Dr. Channing's views, that the entire or healthy skin was the least fit medium for the introduction of medicines into the system, and that, in order to make such applications useful, the usual method was to denude the skin, or remove its external envelope. To this objection, Dr. Channing replies by referring to the questionless results of the endermic practice of medicine. He also referred to the anatomical fact that the mucous tissue was nothing more than the common integument extended or continued into open cavities. Now, who can question the immediate effects of chloroform when inspired into the most healthful lungs? He further contended, by reference to established facts, that chloroform is nearly or quite as rapid in its agencies when applied to the sound skin as to the sound lungs. He had met with these effects too often to question this statement. He did not say that the external application of chloroform would cure or remove a disease of which pain was a symptom. Neither does opium. How rare is it that disease disappears with symptoms! His object in recording his cases was to show that pain had as often, nay, oftener, been relieved by chloroform than by any other remedy for pain in his memory, and for this he had asked the attention of the Society to his experience of its anæsthetic effects.

As to a lesion of the skin as favouring the remedial effects of external medication, he could only say that analogy did not sustain the doctrine. A lady in advanced phthisis had derived much relief from ether in the sufferings of its earlier stages. In the progress of the disease, when more and more of the lungs was suffering from its power, she was obliged constantly to increase her quantity of ether in order to find relief. For some time, a quart a day had sufficed. But this was increased until nearly six quarts were consumed in the same time. Not only did she directly inspire it, but her dress, and the furniture of her sleeping and sitting-rooms, were kept wet with ether, so that she might live in an atmosphere of ether vapour. Here was lesion of texture in every extent and variety of it—nerves were fully exposed—still the ether was increased in quantity as fast as new or additional lesion was produced.]

November 24.—*Polypus of the Uterus.*—Dr. CHANNING exhibited a portion of a polypus of the womb, which he had lately removed from a patient, who had for more than a year suffered severely from the symptoms of polypus. These were excessive hemorrhage during the catamenial periods, and hemorrhage at other times from extra exertion. Except at the menstrual flow, the tumour remained within the womb. At his first visit, the polypus was partially protruded from the os uteri, the catamenia being present. An unsuccessful attempt was made to include the protruded portion in a ligature. It was agreed that ergot should be given before and during the next period, and, if the tumour came within reach, another effort for its removal should be made. He was called again to visit the patient at her residence in the country, where he first saw her.

Examination discovered a tumour of large diameter, filling, and extending beyond, the os uteri. Its vaginal extremity looked directly to the hollow of the sacrum, the fundus of the womb being towards and above the symphysis pubis, lying directly across the pelvis, or from before backward. This situation rendered the application of the ligature very embarrassing. The double canulæ, as modified by Gooch, were used. They were carried, armed with whipcord, to a point of the projecting polypus, as near as possible to the os uteri. One of them was made to rest there, while the other, swept along the

projecting tumour, was carried beyond its free end, and then along its opposite face, until opposite the fixed canula first described. Carrying the ligature along with it until it was parallel with the first canula, it was brought down and over the tumour until it met its fellow. In this way a loop was formed which embraced the tumour. The slide was next carried along the canulæ till it reached their farthest extremity. The ligature was now drawn tight, and examination having satisfied Drs. Channing and Stevens, the attending physicians, that it was in its place, it was secured at the ring or shoulders of the instrument.

The ligature gave no pain. It was tightened twice a day, and on the fourth day the tumour fell off, and when measured, though contracted by the spirit in which it had been preserved, was found to measure in circumference 7½ inches, and 2½ inches in diameter. Perfect recovery followed the operation.

Dr. Channing reported another case, in which great suffering from forcing pains was experienced at the catamenial periods, accompanied by excessive hemorrhage. In this case the tumour was found within the os uteri, the latter surrounding it very closely, making the dilated cervix, and the exceedingly thinned labia, to resemble *phymosis*. Such was the closeness of contact between the polypus and thinned cervix, that the smallest probe could scarcely be passed between them. Ergot was given in this case at the catamenial period, as in that above reported. The polypus protruded, and being in the axis of the vagina, was reached and surrounded by the ligature with comparative ease, and secured. The polypus dropped off, and perfect recovery followed.

Dr. Channing said that he had operated in a number of cases; that he had met with no bad results; on the contrary, his patients had done well. He has sometimes found pain complained of when the ligature was first drawn. The pain, which was of short continuance, was probably owing to the fact that in some cases the ligature was applied nearer to the womb than in others, and pressure was thus made upon some of the tissues of the organ which were sensitive. In these cases, the base was very large, and strong pressure was necessary to produce strangulation. Recovery was as rapid in these as in those cases in which no pain was felt. In no case has there been any return of polypus. The latest he has met with was the smallest of the whole number; and yet the pain, the hemorrhage, the debility, and intolerance of almost any amount of motion, were nearly as pronounced as in any of the rest. It was about two inches in length, but very small in diameter, and sprung from a very minute pedicle from the lip, or from just within the os uteri. It was removed by the polypus forceps, by twisting the instrument, and without either present or secondary hemorrhage. The relief was perfect.

Dr. J. M. WARREN asked Dr. C. if he had not met with any case in which polypus had returned after being removed by the ligature? Dr. C. said that in his own practice he had met with no such case, and he meant to confine his remark, on this point, above given, to his own observation. He remembered a very interesting case, which, with Dr. Storer, he had recently the great privilege of examining, by the kindness of Dr. Warren, and of witnessing Dr. W.'s successful application of the ligature; and in which case Dr. W. had, a few months since, done the same operation for another polypus.

Dr. C. requested Dr. Warren to give an account of this case to the Society; which request Dr. W. complied with as follows:—

The patient was an unmarried female, thirty years of age, and was operated on before by Dr. W., four years since, for a polypus of the uterus, and has been quite well until within six months, when the symptoms denoting the

existence of another tumour in the cavity of the womb were manifested. The history of the case was as follows: Four years and a half ago, while entering the house in the evening, she fell, receiving a severe blow on the lower part of the abdomen, from the stone step. She was carried into the house in a state of great suffering, and a profuse uterine hemorrhage followed. For some months she was confined to her bed, scarcely able to turn from pain, and suffered from occasional returns of the bleeding. Coming under the care of an experienced practitioner, a vaginal examination was made, which disclosed the existence of a polypoid tumour extruded from the os uteri. Dr. W. saw the patient in consultation, and advised an operation. At this period she was suffering from anæmia, and so exhausted as to make it unsafe for her to assume the upright position, as the attempt was always attended by fainting. A ligature was applied to the polypus, and the tumour separated on the fourth or fifth day, the subsequent recovery being rapid.

The patient remained well until six months since, when the recurrence of hemorrhage at the menstrual periods, severe pains and bearing-down sensations in the back and loins, seemed to indicate the existence of uterine disease. Added to the above symptoms was the discharge of a gill of watery fluid from the vagina once in five or six days.

On examination, Dr. W. found a tumour occupying the whole fundus of the uterus, and projecting into the vagina. With some difficulty the finger could be passed into the cavity of the organ through the os, which tightly embraced the central part of the polypus; with the speculum it could be distinctly seen, its parietes presenting a white, glistening appearance. Dr. Channing and Dr. Storer saw the patient with Dr. W., and concurred with him in opinion as to the nature of the disease and the propriety of an operation. Accordingly a strong ligature, made of whipcord, was applied to its base in the following manner: Two porte-nœuds threaded with the ligature were carried up through the os uteri to the base of the tumour. Then by taking one in each hand, they were made to describe a semicircle around the polypus. The ends of the ligature were now engaged in the serre-nœud of Græfe, which being carried up to the root of the polypus, the threads were disengaged from the porte-nœud, and the ends drawn as tight as possible and secured. By means of a screw, the pressure was increased daily, and the tumour destroyed, so that the instrument separated at the end of a week, no constitutional symptoms of consequence having occurred. The patient has menstruated once or twice since, and is now in a good state of health.

Dr. Channing expressed his surprise, at the time, in view of the facts presented by this case, as very high authority has stated that it never had happened, or it was not on record, that a second polypus had followed the removal of a preceding one. This case was of great interest, for in it another polypus had certainly grown from the same womb, presenting all the characteristics of the disease.

Dr. PARKMAN remarked that, although a second polypus might not grow from the pedicle of one removed, still the disease might proceed from another part of the womb. Dr. Warren supposed this was the case in the instance just related.

Dr. Channing added that this idea gets support from the fact that, in Gooch's cases, and in his own, the removal of a small portion, only, of the polypus was as surely curative of the whole, as if the ligature had been applied at that part of the pedicle nearest to the womb; as the umbilical cord will as surely be separated from the abdomen, if any number of inches remain between the ligature and abdomen, as if only one or two remain. Dr. C.

thought this of practical importance, as it avoids the pain which sometimes follows on tightening the ligature, from its being very near to the internal surface of the uterus. He thought that the fatal cases which have followed the operation, and in which peritonitis occurred, though reported to be exceedingly rare, might be accounted for by such a mode of applying the ligature.

November 24.—*Attempt at Self-Castration by a Lunatic.*—Dr. STEDMAN related the case of an Irishman, "affected with melancholia of the deepest dye," who, remaining for months without any improvement, was with difficulty made to eat or speak, and was regarded as imbecile, or nearly so. Very early one morning, Dr. S. was summoned to him, and found one testis partially torn from its envelopes, and blood largely effused. The urinal used by the patient was discovered broken in several pieces, all of which, but one, were quite clean; this being smeared with blood, pointed out the instrument used. Dr. S. said he was surprised to find such a wound made with so imperfect a cutting edge. The wound healed readily, the patient dying some time afterwards of phthisis.

November 24.—*Enchondroma of the Ring Finger.*—Dr. H. J. BIGELOW presented the specimen, and described the case. The affection was of ten years' standing, its growth, however, mostly within two years, and it occurred in the person of a young man otherwise healthy.

Dr. B. said that it is not yet decided how far enchondroma is recurrent; there are instances of it in the scapulæ and ribs; in enchondroma affecting several fingers, recurrence has been observed. These tumours grow from the centre, and sometimes from the exterior, of the bone, and are occasionally free from attachment. Microscopic examination shows the cartilage to be rudimentary; it is granular, with feebly marked corpuscles. Dr. B. showed, with the tumour, a cast of the hand, and some drawings of the microscopic appearances.

November 24.—*Spontaneous Dislocation of the Crystalline Lens in Utero.—Subsequent Inflammation of the Eye.* Reported by Dr. BETHUNE.—John F., four years old; soon after birth, the lens was seen by the parents of the child in anterior chamber of right eye; at first light coloured, it has gradually become darker. Sight apparently never good with this eye. Last spring, the eye became inflamed; this subsided, but the eye was again attacked three weeks ago, and now, on examination, the left eye is well; right eye, conjunctiva and sclerotic injected; choroid, generally, shows through the sclerotic, more at a point above the cornea, near which are seen large dilated vessels; pupil largely dilated, fixed. Anterior chamber filled with amber-coloured lens, round, except for a triangular fissure at the lower edge.

Treatment.—One leech occasionally, whenever inflammation is apparently increased, with small doses of castor oil from time to time; simple warm or cold water applications, as most agreeable to the child. Diet and rest. If these means prove ineffectual for relief, the patient is advised to return for extraction of the lens.

Nov. 24.—*Cerebral Disease of Peculiar Nature and Severity.*—Dr. STORER reported the case. Catherine Sullivan, æt. 25 years, entered Mass. Gen. Hospital, August 30th. Had enjoyed good health until five days previous to her entrance, when, fatigued by a day's washing, she threw herself, while much heated, upon the floor, and fell asleep. Upon awaking, she felt some numb-

ness of the extremities, and a sensation of giddiness. Has since complained of obscure vision, and a difficulty of deglutition, with an inability to guide the muscles of the extremities.

When I first saw her, she was in bed, suffering from great nervous excitement, complaining of dyspnœa and a sense of suffocation, attributable by her to derangement in the throat. She had a peculiar expression of countenance, produced by a semi-strabismus; when asleep, respiration was stertorous; the skin was moist; pulse 100.

For several days immediately succeeding her entrance, she had at Dr. Storer's visit—and only at that time and upon taking her medicine—a nervous paroxysm, consisting of short spasmodic laughs, or giggles, which were supposed to be symptoms of hysteria, and for this affection she was treated with *antispasmodics* and *counter-irritation*.

On September 9th, ten days after her admittance to hospital, it is recorded as follows: Motions of right hand much improved. Was able to dress herself this morning. Less appearance of hysteria now than at previous visits.

Sept. 19*th*. Complained of nausea this morning previous to breakfast.

20*th*. Speaks of pain in right forehead, extending to eyes, which she says has existed in a greater or less degree for a week. Apply veratrine ointment. ℞. Veratria gr. viii; axunge ʒi. M.—Apply to affected part.

21*st*. Pain in head not relieved. Above seat of pain, a very marked nodosity, which has increased since her entrance. Strabismus increased. Sleep accompanied with stertorous breathing, to such extent, at times, as to disturb inmates of ward. Giddiness upon erect posture. Constant disposition to sweat, which was not noticed until yesterday. Let the head be rubbed with—℞. Tinct. cantharid., tinct. capsici, āā ʒj. M.

23*d*. Less power of motion in right arm. Great rigidity of flexor muscles of this arm and hand, and of right lower extremity.

24*th*. Limbs even more rigid than before. Great force required to move them from positions.

25*th*. Rigidity of limbs increased. Nurse represents patient as having been perfectly helpless this morning. Ordered sinapisms to neck and feet, and a pill, once in four hours, of—℞. Hyd. chlorid. mit. gr. i; pulv. opii. gr. ½. M.

26*th*. A sensation of strangling accompanies attempts at deglutition. Strong muscular contractions of fingers of affected hand, thumb being drawn across palm of hand, and covered by the fingers.

27*th*. Difficulty of deglutition increased. Has swallowed almost nothing since yesterday morning. Apply to nape of neck—℞. Emplastr. cantharid. 6×3.

28*th*. Speaks with more difficulty than at any previous period. Yesterday had several attacks of dyspnœa, which were relieved by inhaling sulphuric ether. During the day, succeeded in swallowing half a pint of arrowroot. Pill was administered with the nourishment. It had previously been repeatedly omitted on account of the difficulty of swallowing.

29*th*. A more comfortable day and night. Suffered less from dyspnœa. Difficulty of deglutition less marked. Greater animation. Rigidity of extremities as before. *Salivation very distinct.* Bowels being constipated, ordered—℞. Inf. sennæ compos. ℥ii; or, if much difficulty in administration—℞. Olei tiglii gtt. i.

30*th*. Medicine was taken with effect. Had a quiet night. No dyspnœa during night. Less rigidity of muscles. More power of motion.

Oct. 1*st*. Less rigidity of muscles.

2*d*. No dyspnœa. No giddiness. Sitting up. Apparently troubled by ptyalism alone.

3*d*. Hysteria more marked since grave symptoms have diminished. Mouth very troublesome. Ordered—R. Potassæ hydriodat. gr. vi. three times daily.

4*th*. Strabismus increased. Nurse reports patient as walking more naturally to-day than at any previous period. Mouth improving.

7*th*. No return of unfavourable symptoms. Sitting up, answering questions without any hysteria. Ptyalism still profuse. A marked enlargement of right pupil.

From this time her convalescence has been uninterrupted. Dr. S. left her on Nov. 1st, at which time her nights were good, without the slightest dyspnœa or stertor. Intelligence perfect. No difficulty in deglutition. Walking daily improving. She is constantly moving about the ward, cheerful and happy.

Nov. 29*th*. Dr. S. visited the Hospital to-day, and extracted the following from Dr. Bowditch's records:—

Nov. 15*th*. Cephalic, thoracic, abdominal functions well. Sits up all day. Node which existed on forehead nearly gone.

19*th*. Walked out yesterday.

22*d*. Catamenia present.

December 8.—*Microscopic Appearances in a Section of a Fossil Tooth from a Species of Shark.*—Dr. DURKEE exhibited, under the microscope, a fine specimen of a fossil tooth of the Charcharodon Angustidens, one of the largest species of sharks whose remains have ever been discovered. Some months ago, Dr. D. received several teeth of this kind from a friend in Alabama. The largest measured nearly two inches at the base, and were about two inches in length. Dr. D. made a longitudinal section of one of these, and polished it down for microscopical observation. The original structure of the tooth thus treated, was brought as distinctly into view, as if it had been removed but yesterday from the living animal's jaw. The distribution of the nutrient vessels, as viewed with a power of 170 diameters, was exceedingly beautiful, and bore a close analogy to the Haversian canals, and the delicate canaliculi which are seen to anastomose so freely in all true bone.

December 8.—*Cancerous Disease—Four specimens exhibited by* Dr. JACKSON.

1*st*. Encephaloid of the pyloric portion of the stomach; sent by Dr. Fifield, Jr., of Weymouth. The disease is well marked, and well defined, of a circular form, about four inches in diameter, and rising about half an inch above the surrounding surface in soft, regular masses, which projected beyond the base; situated mainly in the posterior parietes, and within an inch of the pylorus. The patient was a bootmaker, and Dr. J. thought that pressure upon the epigastrium may have had something to do with the development of the disease. He was 48 years of age, and had been long subject to dyspepsia, and constipation; gave up work last February, and had kept his bed since July; became greatly emaciated; and, during the last three weeks, a tumour was felt in the epigastrium; never had much pain. Dysphagia was an urgent symptom, though the disease was far away from the cardiac orifice of the stomach; there was also vomiting one or two hours after taking food. The organs of the abdomen were closely matted together as by former peritonitis, but there was no other

encephaloid disease. Dr. J. thought that such limitation of the disease was quite unusual in the case of the stomach.

2*d*. Encephaloid disease of the uterus, extending into the vagina, and projecting into the cavity of the urinary bladder in the form of a whitish, soft tumour of considerable size. There were, however, no urinary symptoms recorded during life, or known to the nurse to have existed, as was ascertained by inquiry after the patient's death; a fact which is remarkable, considering the natural irritability of the organ affected; ulceration, however, had not fairly commenced. The surrounding cellular tissue was indurated, and the ureters were much dilated, as so often happens in cancer of the uterus; but there was no other disease in the abdomen. The patient was a married woman, 32 years of age, and had died recently at the Hospital. The disease was marked by most of the usual symptoms, and was probably of at least ninem onths duration. Previously to this she had had for some months what she regarded as profuse menstruation; there was, however, no hemorrhage after the disease was fairly established, except when she was examined by the speculum or otherwise, at which times she suffered severely.

3*d*. Scirrhous disease of the uterus; contrasting well with the last case; the ulcerated surface being as dense in this as it was soft in the other; os and cervix uteri destroyed, with the whole upper part of the vagina; ureters dilated as in the last case, though the bladder and surrounding cellular tissue did not seem to be involved. The dissection was made by Dr. J., and all the organs of the abdomen and thorax were examined, but no other cancerous disease was found. The case occurred in the practice of Dr. Cornell, and has been fully reported in the *Boston Med. and Surg. Journ.* for Dec. 10th. The patient was 39 years of age, had suffered from the disease for a year or more, and the case was remarkable for the small amount of hemorrhage, and for the entire absence of pain, though there had been uneasiness about the pelvis. Dr. J. remarked upon these cases as confirmatory of the observation often made, that the other organs are generally healthy in cancer of the uterus.

4*th*. Encephaloid masses in the upper lobe of the right lung; one of which, situated just beneath the surface, shows the depression in the centre which is so often seen in cancer of the liver; an appearance which Dr. J. has never before observed in the lung, though Dr. Walshe (*Diseases of the Lungs and Heart*) refers to it. The patient was a woman, 45 years of age; and the examination was made by Dr. Ainsworth, who found upon the left side no trace of pulmonary tissue, but in the place of the lung a mass of encephaloid; there had been, however, no dyspnœa, though early in the disease there was much cough. There was also found a large encephaloid mass in the situation of one of the kidneys; the tumour which it formed having been felt by Dr. H. two and a half years ago.

These specimens have all been examined microscopically by Dr. H. J. Bigelow, and appearances characteristic of cancer were found.

Dr. J. remarked upon the "straw-coloured" hue which is so often observed in cancerous patients, and is so generally regarded as characteristic of the disease, that he believed it was generally owing to the natural complexion of the individual. A light-complexioned person will look simply pallid, when reduced by hemorrhage, or labouring under any disease that impoverishes the blood; but one of a dark complexion will naturally retain something of the original swarthy hue, and thus the so-called "straw-coloured" appearance is produced; and it matters not whether it is cancer, or any other disease, that produces it.

December 8.—*Croup.*—Dr. CHAS. E. WARE reported the following case of croup. Monday, Nov. 24th, he was called to a girl four years old. She had been attacked in the morning with vomiting and sore throat. No febrile symptoms. Her tonsils were of a deep red colour, and somewhat swollen. There was a distinct patch of lymph on one of them. Her respiration was perfectly free, and her voice natural. Her bowels were moderately moved by a cathartic, and she took a Dover's powder at night. Through the next day she continued in very much the same condition—was up, dressed, and about the room.

November 26*th.* (Wednesday.) In the morning her voice was a little husky; her skin rather dry and feverish; tongue thin and furred; appetite small; lymph on each tonsil; her fauces and larynx were thoroughly washed with nitrate of silver, one drachm to the ounce.

In the evening her respiration had the decided croupy character. She very rarely coughed, and when she did, there was nothing resonant or sonorous about it. In both backs the respiratory sound was full, clear, and entirely without râles.

27*th.* (Thursday.) Her voice was gone except in a whisper; her tongue was more thick, and furred; skin more hot and dry; pulse 112; no labour in her respiration; her general aspect good.

28*th.* (Friday.) In the morning her respiration had become somewhat more embarrassed. She was very restless, and anxious to be carried about. Her pulse was smaller in calibre, and more difficult to count, but not more frequent. The respiratory sound in both lungs was diminished in amount, but clear and free from râles. Through the day, her respiration became more laboured, but she retained a good colour.

Through Saturday she was rather more quiet; respiration not more laboured; appeared to be in less distress, and retained still a fresh colour.

30*th.* (Sunday.) Her aspect had changed; her face and extremities had become quite livid; her breathing was much more embarrassed; an inspiration sounded as if the air was drawn through a small dry tube. She had vomited, in the night, some thick tenacious mucus, but nothing like membrane; it was spotted with a few specks of blood. In both backs mucous râles were discovered, but no respiratory sound. She gradually sank through the day, and died at 5 P. M. Her treatment was cauterization, Dover's powder with a little calomel in it, and constant steaming by fomentations about the neck. At the autopsy there was found false membrane on the tonsils, fauces, larynx, trachea, and extending down to the primary bronchi. The bronchi, on both sides, were filled with thick, tenacious, purulent mucus, especially on the right. The mucous membrane was intensely red and thickened; the middle lobe of the right lung was carnified and in a state resembling the lungs of a newborn child.

Dr. Ware thought the case presented with more than usual clearness the peculiarities which distinguish this disease from those forms of croup in which no false membrane is thrown out. A slight sore throat with small patches of lymph on the tonsils, without much general disturbance for a day or two before the croupy symptoms began to appear; the trifling character, and husky tone of the cough throughout the disease, and its never presenting that stridulous sonorous tone which Dr. Ware thought characterized the spasmodic croup, or those cases in which there was a simple thickening of the mucous membrane, and which was comparatively rarely heard in genuine croup; the loss of voice as the larynx became involved; the gradual diminution of the respiratory sound in the lungs as the passage for the admission of air became contracted; the lividity, and relaxed condition of the muscles; the

restless seeking for relief from the prolonged, increasing suffocation; the absence of respiratory sound, and the appearance of mucous râles in the lungs about twelve or eighteen hours before death, and the then rapid sinking of the child. There was one point in which this case differed from many others. In rapid cases the child commonly dies from suffocation; then nothing can be more dreadful than its distress for some hours before death. In this case the last day was not the most distressing; as the lungs became affected, the extremity of the dyspnœa was diminished, and there appeared to be a less demand for air. In another case which Dr. W. had recently seen, where the disease was of some days' duration, and pneumonia had supervened, the dyspnœa was not extreme for eighteen hours before death. The apparent relief in these cases might be owing to the exhausted condition of the child, but not he thought entirely. It seemed, when the child was able for a certain length of time to contend with the disease, as if the system adapted itself to the condition of things, and an equilibrium was again established between the respiration and the circulation. If this is so, it is an important practical point to be borne in mind in the treatment, and would contra-indicate the reducing practice which was formerly, and is now, to some extent, pursued. If the effusion of lymph is not checked at the outset, but has extended to the larynx and trachea, and the child can only be relieved by throwing it off, or by absorption; the longer it can be made to live, the better will be its chance, and everything that can be done should be done, in such cases, to support the strength. All depressing treatment should be avoided.

The throat and larynx were thoroughly cauterized with a strong solution of lunar caustic, passed in on one of Green's sponges, twice a day, from the time of the first indications of croup, without any manifest benefit. Lymph was found after death upon parts which must have been thoroughly washed with the caustic. Although this treatment has found much favour lately, and perhaps is more frequently successful than any other, Dr. Ware thought that its efficacy had been somewhat overrated, by confounding the various classes of croup together. The caustic probably does not reach much, if any, below the larynx. Where the disease is limited to this neighbourhood, the treatment, one would suppose, might be very efficient. But such cases constitute, probably, but a very small portion of the cases of genuine croup. Dr. W. had never seen an autopsy of a case of croup in which there was not membrane in the trachea, and in the primary bronchi adhesive mucus or pus, so tenacious as to be almost equally as embarrassing as lymph, to respiration. Upon such cases cauterization could have little effect. They are probably, with very rare exceptions, fatal. Where the disease commences in the throat or larynx, and cauterization is thoroughly applied, it may sometimes arrest the effusion of lymph, and the extension of the disease, and these, so far as he had observed, he thought had been the successful cases. If the disease extended far below, he questioned whether the treatment could have much efficacy. The relief then seemed to come by throwing off the membrane. There was no particular reason to suppose that the application of caustic would promote this process. A certain number of cases got well under the former treatment in this way. There is not such a difference, certainly, in regard to those cases which get well by discharge of the membrane now and formerly, as to make it very probable that the caustic promotes it. He thought that not many, if any, more of this class of cases were saved under the present treatment. How many of those cases of effusion of lymph upon the tonsils, in which croup has not yet appeared, and to which caustic was applied, would have otherwise terminated in croup, he was not prepared to say. Here he should think it very probable was the

principal benefit which the introduction of this treatment had conferred upon the profession. It is not very uncommon to see effusion upon the tonsils where there is no croup. And from the ordinary effect of caustic upon mucous membranes, it would seem probable that a free application of the caustic would check the extension of the effusion downward, and protect some children from the disease who would otherwise have it. It must take a very long experience, and careful observation, to test the real efficiency of the treatment in a disease so few cases of which fall under the observation of any one practitioner, and which is so closely simulated by some of its comparatively harmless forms as readily to deceive the observer.

Dec. 8.—*Fracture of the Lower End of the Radius, with other Fractures.—Description of Professor Beaumont's Apparatus, &c.*—Dr. J. M. WARREN presented the specimen, which was quite interesting from the fact of the opportunities being rare for observing this fracture in a recent state.

The patient was a man thirty years old, and was brought into the Hospital, having fallen a distance of forty feet through a scuttle to the floor. The following is the Hospital Report:—

"There is now, at six P. M., fracture of the right radius, apparently just above the joint. There is great deformity, simulating dislocation of the wrist backwards. Crepitus distinct.

"The right leg is shortened, by measurement, one and a quarter inches. It is everted, with edge of foot lying flat upon the table. There is distinct crepitus at or near the cervix femoris. When pressing the two iliac crests, they yield sensibly, and give a *feeling* of indistinct crepitus." The patient died at ten P. M."

The pathological appearances of the parts exhibited were as follows: The right radius was fractured transversely half an inch above the joint, with a comminuted fracture extending into the joint. The internal lateral ligament was torn away from its attachments to the ulna, carrying a bit of the bone with it.

The right femur was the seat of a comminuted fracture through the trochanter, and a longitudinal fracture of the shaft of the bone extended from its cervix downwards for four inches. Neither of these fractures communicated with the capsular ligament.

The right sacro-iliac synchondrosis was torn asunder, and the bones forming it, fractured. The ramus of the ischium and pubis was fractured. The lower half of the sacrum and os coccygis were comminuted.

In connection with the specimen of fracture of the lower extremity of the radius, Dr. W. made some remarks on the interesting nature of this accident to surgeons, from the liability to deformity so likely to occur in spite of the best-directed treatment. The various apparatus invented by so many distinguished surgeons, with the object of preventing this deformity, show the importance attached to it. From simply regarding the external appearances presented by this fracture, it was formerly supposed that the bones yielded in an oblique direction; but observation of pathological specimens has shown that it is, on the contrary, almost always transverse, the peculiar deformity arising not so much from the overlapping of the fragments, as from the direction of the displacement by muscular action. Dr. Smith, of Dublin, in twenty specimens which he examined, found the fracture to have a transverse direction in eighteen. In the present specimen it is transverse.

Dr. W. said that he would avail himself of this opportunity to show a very efficient apparatus for making extension in fractures of the lower extremity

of the radius, contrived by Professor Beaumont, of Toronto, to whom the profession is indebted for the invention of many ingenious surgical instruments, some of which have been for a long time in use at our Hospital.

This apparatus consists of an angular splint, made of gutta-percha, adapted to the bend of the elbow. To this is attached a bar of iron, which extends beyond the hand, and is then bent to a right angle. This latter portion has attached to it two axles, with ratchet wheels, for the purpose of making extension by means of cords attached to a leather cap laced to the wrist just above the joint. In addition, there are two small splints adapted to the anterior and posterior part of the forearm.

The following extract from the letter of Dr. Beaumont to Dr. W., describes the method of application:—

"The patient's arm and forearm, having been bent at a right angle, should be placed in the angular splint, and there fixed by a bandage. A piece of gutta-percha, of the shape of the leather cap, may then be softened and wrapped round the carpus and metacarpus, in order to protect the skin from the very painful pressure; and when the gutta-percha has become hard, the cap is to be laced tightly over it, and in such a manner that one loop of the cap shall be on the radial border of the metacarpus, and the other loop on the ulnar border. The strings from these loops may, by turning the axles, be more or less tightened, so as to keep up permanent extension, which will be as nearly as possible in the axis of the broken radius, and the distal fragment will thereby be drawn very nearly into its normal relative position with the proximal fragment. The extension should be so gradually made as to remove the displacement with little or no pain to the patient; but should the extension become painful, it may be lessened by throwing the catch out of the teeth of the ratchet-wheel, and allowing the axle to revolve backwards. The anterior and posterior splints need not be applied for the first week, especially if the distal end of the forearm should be much swollen and inflamed, and as this part may be left exposed in its whole circumference, he can very effectually apply cold evaporating lotions, and can see and feel that the fragments are in their normal relative positions before applying the anterior and posterior splints. These splints are made to reach very nearly to the carpus, and, as you see, are so made as to press most against the interosseous space (so as to preserve its width), and also to prevent pressure in a direction from radius to ulna."

Dr. Beaumont also thinks this apparatus might be found useful in fractures at other parts of the radius, also in fractures of the coronoid process of the ulna, with dislocation backwards, and in fractures of the humerus just above the condyles, when the latter and the bones of the forearm are drawn backwards.

Dec. 8.—*Dislocation of the Hip-joint, with other Injuries.* Dr. J. M. WARREN.—The patient, a man about thirty years old, was buried under a bank of earth. On being dug out, he was brought to the Hospital about four hours after the accident, and seen by Dr. Warren.

On examination, it was found that he was labouring under a slight concussion of the brain; that the right hip was dislocated, the limb being inverted and shortened two and a half inches. The left testicle had been torn out from the scrotum, and hung suspended by the spermatic cord; it was covered with gravel, and the external tunic was so dry, from exposure, as to crackle like parchment. As the vessels still continued to pulsate, Dr. W. determined to make efforts to preserve it. It was, therefore, temporarily enveloped in a compress wet with warm water. The patient was now placed under the full influence of chloric ether, with a view to the reduction of the dislocation. The

force of the pulleys being applied, although a perfect state of relaxation from the effect of the anæsthetic agent seemed to exist, it required continued effort for ten or fifteen minutes before the muscles concerned in the production of the dislocation began to yield. The limb was gradually brought down, and when the head of the bone came opposite the socket, a slight rotatory movement being given to it, it slipped in with a distinct report. On moving the limb after the reduction, an uncommonly loud cartilaginous crepitus could be heard, and this symptom, in a modified form, continued for five or six weeks after the accident, when the patient was recovered sufficiently to walk about the ward.

Attention was next given to the testicle. The scrotum having strongly contracted, it was found to be a matter of some difficulty to return it, which was finally effected by seizing the scrotum with the fingers, and then forcibly crowding in the testicle, through the wound, with the thumbs, confining it thus until two or three sutures were made in the integuments.

More than two months have elapsed since the occurrence of the accident, and the patient, when last seen, was recovering the use of the injured limb. The wound in the scrotum healed well, and the testicle seems to have suffered but little from the exposure it was subjected to.

The application of the extending force was, in the present instance, made from the ankle, and was found much more convenient than by the ordinary method from the lower part of the thigh. No subsequent inconvenience was experienced by the patient in the knee-joint. He had some pains and swelling in the ankle-joint, a number of days after the injury, but whether it resulted from the accident, which was a complicated one, or was in any way connected with the manner in which the extending force was applied, it was impossible to determine.

December 8.—*Hydro-Nephrosis.*—Dr. GAY exhibited the specimen, taken from a dissecting-room subject. The kidney, with the pelvis, is dilated into a thin cyst, and about the size of the fist; somewhat sacculated internally, but without any trace of renal structure. Ureter of about the usual size, but ends in a cul-de-sac, within an inch of its origin. The cyst was filled with a thin red liquid, which, having been examined by Dr. Bacon, was found to be a serous fluid, slightly acid, and containing a large amount of albumen; with but little saline matter, except the triple phosphate, of which there is a considerable proportion. No urea, nor uric acid. Specific gravity 1.017. The red colour is owing to hæmatin, not contained in the blood-discs, but dissolved in the fluid. Epithelium cells seen under the microscope. On being heated, the fluid gives out a disagreeable, but not a urinous odour; which last Dr. G. thinks it had when recent. Dr. B. remarked that the triple phosphate was the only substance found that can be considered as belonging to the urine; but that the occasional presence of crystals of this salt on the peritoneum, &c., shows that it may occur in other secretions besides the urine.

December 8.—*Tænia Solium, Appearances of the Head of the Worm.*—Case reported by Dr. INCHES. The patient was thirty-eight years of age, and a man of intemperate habits. Last April, and during an attack of pneumonia, he passed about 4½ feet of the worm, many of the joints being but very slightly connected; and that was the first knowledge that he had of its existence. In the course of the summer, joints occasionally came away, and especially when he walked fast. About the last of November, he consulted Dr. I., on account of an oppression at the epigastrium; and under the use of medicine he ex-

pelled, in the course of a day or two, a considerable piece of the worm. A few days afterwards Dr. I. was sent for, and found him in bed with ascites. Castor oil and the oil of turpentine were given, and seven feet of the worm were expelled. The ascites continued, general dropsy supervened, and he died about two weeks ago: a granulated liver being found to explain the dropsy.

The dissection was made by Dr. Jackson, and the intestines were opened, a few inches at a time, and carefully examined. Throughout the small intestine there was a great quantity of very tenacious, pasty mucus, much of it being deeply coloured with bile; and, in the large intestine, a considerable quantity of grayish feces; the mucous membrane itself being healthy in appearance. About the middle of the small intestine, and lying free in its cavity, though buried in mucus, a portion of the worm was found, about three inches in length and very slender; and this was the only trace of it that was discovered.

The specimen having been submitted to Dr. Gould for examination, he discovered at once the characteristic appearances of the head of the parasite, the bulging, club-shaped extremity, and the four oval orifices. In the centre was a minute pit, but no marked orifice, and certainly no trace of the coronet of hooks, as usually represented. The fact of the existence of these last has been sometimes questioned; but when not seen, Dr. G. imagines that they are simply inverted, as represented in some of Blanchard's figures, which were shown to the Society (*Annales des Sc. Nat.*, 1848). Dr. G. showed the drawings that he had made of the above appearances as seen under the microscope; and he remarked particularly upon the imperfect division into joints, authors generally describing them as if they were continued quite to the head, and even Blanchard representing them as much more distinct than they are seen to be in the present specimen. For the first three-fourths of an inch or more, there is no trace of joints; after which they begin to appear upon the edges, and gradually come to extend quite across, being at first exceedingly short. Dr. Jackson remarked upon a statement made by Blanchard, that with some exceptions the genital orifices open alternately upon different sides in the successive joints, conformably with the general descriptions. Dr. J., however, has always found greater irregularity in this respect, and is inclined to regard it as an accidental circumstance, whether they open upon one side or the other; the orifices being sometimes upon the same side of the parasite, for ten or twelve successive joints.

December 8.—*Tumour from Submaxillary Region.*—Dr. H. J. BIGELOW exhibited the tumour which he removed, on Saturday last, from a boy of 11 years, at the Hospital. Its growth had been rather rapid; five months in attaining the size of a medium potato. It came on after an attack resembling mumps. The patient, likewise, had struck his face against a tree; a swelling, under the integuments, soon arose, of the size of a bean; when examined, previous to its removal, it had not the knobbed feel of non-malignant growths. On dissecting up the integuments, it was found to adhere very closely throughout, the fibres being interlocked with those of the masseter muscle. A large, bifurcated, nutrient artery required a ligature on each branch. Dr. B. regards the tumour as encephaloid in its nature. The microscope reveals, chiefly, cells similar in size to pus globules, with nuclei and nucleoli. Dr. B. showed two daguerreotypes of the patient, taken before the operation.

December 8.—*Strangulated Hernia. Importance of an Early Resort to the Operation, the Taxis failing.*—Dr. H. J. BIGELOW reported the case, which had

recently occurred. A lady, 66 years of age, for many years the subject of crural hernia of the right side, which she had been able to reduce herself, got it strangulated; the hernial tumour came down at 8 o'clock A. M., and pain commenced at 11 o'clock A. M. Taxis ineffectual, even in the etherized state. The operation, at 7 P. M., discovered a tense, strongly girt, maroon-coloured loop of intestine, which was reduced; the pulse, that night, 96; next morning, 84. Bowels open, *naturally*, the night of the operation, and since. There was no vomiting. Dr. B. remarked the advantage of an early resort to the operation in cases of strangulation, when taxis, once fairly tried, is ineffectual.

December 8.—*Croup.—Compound Tincture of Chloroform as a Remedy.*—Dr. STRONG was consulted, late on Sunday evening, in reference to a case of alleged croup. The parents had been familiar with the disease. After inquiring respecting the symptoms, it was thought best to send directions for the treatment, with the understanding that it should be tried, and if without any relief, Dr. S. was to be summoned in the night—otherwise to visit next morning. The child is about two years old. The prescription for the night was hydrargyri subsulphatis ℈ss; pulvis ipecacuanhæ ℈j; pulvis ipecac. et opii gr. vj; misce et div. in chart. no. vj; one powder to be given every fifteen minutes until free vomiting was induced; the feet to be first placed in warm water; and in case of no relief, or if there should be a temporary relief, and then a return of symptoms, the same to be repeated after an interval of two hours. Dr. S. saw the child the next forenoon, and learned that the emetic had been taken, with some temporary relief; the child, at his visit, had quick, laborious breathing, with a croupy cough, aggravated from time to time, and the peculiar, dry, sonorous character of the respiration incident to the worst forms of croup; the countenance, at times, livid. The throat, carefully examined by sunlight, showed white lymph upon both tonsils and over the fauces. Having treated other cases like this without avail, Dr. S. was strongly impressed with the idea that the child would die, and so expressed himself. A cathartic was prescribed, the bowels being confined; and compound tincture of chloroform was freely applied, by cloths saturated with it, to the neck, and the fauces and tonsils were wetted with it by means of a linen "swab." The cloths were re-moistened, and applied as soon as they became dry; and this was persevered in through the day, the applications and swabbing being attended to perhaps as often as once an hour. At a visit made that evening, the same treatment was directed for the ensuing night, with the addition of a grain of Dover's powder, which was to be repeated every two to four hours, as the symptoms were, or were not, urgent.

Next morning the child was better; there had been no attacks of severe dyspnœa; and there were intervals when the breathing was nearly natural. The same treatment was still continued; the application to the throat to be made at longer intervals: in the evening of this day all the croupy symptoms were gone, and the child recovered rapidly. Auscultation detected evidences of bronchitis.

The compound tincture of chloroform has been used by Dr. S. in incipient inflammations—as in bubo, in inflamed glands of the neck, paronychia, and deep-seated inflammation of the hand; also, in inflamed and ulcerated gums; and, so far, with most marked advantage.

Dr. HENRY J. BIGELOW asked whether the emetic medicine or the tincture should be considered the curative agent?

Dr. Strong replied that the emetic caused only a temporary alleviation of

the symptoms; he added, that the tincture was used of the full strength; it contains some tannin.

Dr. DURKEE inquired if Dr. S. would apply the tincture to the *affected parts* in cases of "sore mouth?"

Dr. S. applied affirmatively.

December 8.—*Chronic Bronchitis—Dilatation of the Bronchi.*—Dr. BOWDITCH reported the following case: A girl of 13 years, stout, plump, and generally in good health, but liable to a cough with purulent expectoration, from the age of three years, was the subject. This cough followed a mild attack of measles, and had been constant ever since, save for a few weeks while the patient was residing in Maryland. During all the time that she remained there (several months) she had less cough than when at the North; but it never wholly left her, except as named above.

At times she had been a great sufferer, and had been confined to the house with aggravation of symptoms, some febrile exacerbation, and more cough, and expectoration of a half pint or more of purulent mucus, daily. On entrance at the Mass. Gen. Hospital, she was raising this amount, uniformly opaque, and raised with the utmost freedom. A slight effort only was required to enable her to expectorate. Her functions, generally, were well performed, and she was able to sit up and move about, without much apparent difficulty. On percussion, less resonance over whole of left back than in the normal state. Tubular respiration and great resonance of voice in the same region. Similar resonance and tubular respiration at the middle of the back, extending somewhat towards the apex of the lung. On inspection, the left scapula was nearer to the vertebræ than the right one, and its lower angle was lower, but in no other respect was there any difference between the two sides.

Dr. B. regarded the case as one of dilated bronchi, and not of phthisis, as had been supposed before patient's entrance at the Hospital. The length of time the cough had lasted, the extensive tubular respiration, with little or no alteration of the health, were his reasons for this opinion.

December 8.—*Medical Jurisprudence, &c.*—Dr. STORER asked the indulgence of the Society for a few moments, while he referred to a subject of a personal nature. He observed: "A few months since, I had the honour to address the Massachussetts Medical Society upon the subject of Medical Jurisprudence. While dwelling upon the responsibilities of the physician when compelled to be present in a court of justice, I made the following remarks: 'The most painful duty a medical man is called upon to perform in a court of law, if the ends of justice absolutely require it, is to divulge the secrets of his patients, reposed in him in the course of professional confidence. However great may be the struggle within him—however willing and ready he may feel to make almost any sacrifice, save that of his integrity, to keep forever locked in his bosom what was sacredly deposited there, the laws of his country are paramount to all other bonds.' And after adducing Lord Mansfield's charge to Mr. Hawkins, in the trial of the Duchess of Kingston, I continued: 'Thus there is no appeal. Those facts must be stated which are necessary to further the ends of justice. The greatest caution should be used, however, to prevent anything being made public, that can be suppressed, which can wound the feelings or injure the reputation of a patient. Even the members of the bar look with pity and contempt upon the medical witness who voluntarily exposes any professional confidence.'

"For such opinions, a writer in the last number of the *Charleston Medical*

Journal has taken umbrage, and seen fit to write me quite a homily upon the subject, as follows: 'We regret exceedingly that we are forced to take exception to, and enter a protest against, the views expressed by Dr. Storer, in reference to the alleged obligation of the physician to reveal secrets that are intrusted to his professional safeguard. For the honour of the profession, we trust that Dr. Storer's opinions have received the concurrence of no one; for, if practically adopted, they would soon bring our noble, our divine calling, into merited disrespect and obloquy.' And again: 'Admitting that the laws of some, if not all countries, make it compulsory on physicians to divulge all secrets which come to their knowledge, we maintain that the binding force of the *moral*, to preserve them, far transcends that of the *legal*, obligation to reveal them; and let it not be said that this is a practical application of the political 'higher law' doctrine, at present held by a few fanatics in the United States, for there is not the slightest similitude of the one to the other.'

"Had these remarks emanated from any other source, I might have felt called upon to repel with contempt the insinuation, even, that I would at any time express an opinion, which, 'if practically adopted, would soon bring our divine calling into merited disrespect and obloquy.' But I have not the heart to cherish an unkind feeling—I will not allow myself to make a remark which can be so construed, towards any member of our profession in that city, where your delegates were lately received with the most unbounded kindness and hospitality, and the remembrance of whom awakens in my bosom the most grateful associations.

"I would merely observe that, in a conversation with Professor Greenleaf upon the accuracy of my remarks, he assured me that I was perfectly correct, that the ground I assumed was the right ground—and, at the same time, stated that he had devoted but a *single line* to the subject in the last edition of his *Law of Evidence* (vol. i., p. 316, section 248), because, to use his words, he considered it as 'settled law.'

"To my reviewer I would reiterate my assertion, that I know no higher law than the law of the land—it is supreme."

December 22.—*Gouty Deposit.*—Dr. JACKSON showed the specimens, taken from a man who had been much subject to gout, and who had died recently at the Hospital, of Bright's disease. Both great toe joints, and the metatarso-cuneiform look as if a fine white powder had been sprinkled over the free synovial surface. There was also immediately beneath the skin, over one of the great toe joints, a white pasty deposit, in a sort of cavity about one and a half lines in diameter, with a trace of the same deposit in the neighbouring cellular tissue. The other joints were not examined. The deposit was examined by Dr. John Bacon, Jun., who found it to consist of the urate of soda, with a little chloride of sodium and phosphate of lime, and a considerable proportion of animal matter. Microscopically, it had a granular appearance, but contained no distinct crystals. Dr. J. remarked upon this as being the first case in which he had seen this deposit.

December 22.—*Croup Fatal on the Fourteenth Day, and after the Expectoration of the Membrane.*—Dr. JACKSON exhibited the specimen, and reported the case, which occurred in the practice of Dr. Weld, of Roxbury. The patient was a little girl, six and a half years old, and had, from the first, aphonia, ringing cough, hoarse breathing, and fever. On Thursday, which was the fourth day of the disease, the throat was examined for the first time, and lymph was seen. On Friday the child began to expectorate the membrane, and con-

tinued to do so almost daily until the following Tuesday; a tubular portion, about one and a half inches in length, and apparently from the trachea, being at one time thrown off. A solution of the nitrate of silver was applied freely to the fauces.—The examination was made yesterday by Dr. J., who found ulceration of the tonsils, with traces of lymph, in the larynx and fauces, only. Throughout the trachea, the mucous membrane was of a deep red colour, and had the appearance of erosion and thickening, somewhat as in the case of granular conjunctivitis; several of the bronchi were similarly, though less affected, most of them being unchanged; nothing of the kind was observed in the larynx or fauces. So far as the inflammation extended, the membrane was smeared over pretty thickly with a thin, reddish, dirty-looking pus; the secretion in the bronchia being generally puriform and not coloured, and there being nowhere any of the transparent, viscid secretion usually seen in croup.

Dr. C. E. Ware remarked, in connection with a case of croup which he reported at the last meeting of the Society, that he did not consider the brazen ringing cough as characteristic of the membranous form of the disease. The observation was confirmed by Dr. Jackson, who thought it rather a favourable sign than otherwise, and as indicative of a spasmodic state of the parts; the vocal cords being, as it would seem, in a less favourable state for the production of the sound in question, when covered with lymph.

December 22.—*Old and extensive Osseous Disease—Contraction of numerous Muscles and Tendons—Division of these and Amputation of the Leg.*—Dr. PARKMAN presented the bones of the ankle, and gave the following history. A man, aged forty-five, came under his care at the Hospital, having been bedridden a number of years, presenting the following appearances. The thighs were flexed at a right angle upon the trunk, and extension rendered impossible from contraction of the sartorius, rectus, and tensor vaginæ femoris muscles of either side: the legs were also bent on the thighs at a right angle, and extension was impossible on the right side from bony anchylosis, consequent upon old disease of the joint, many pieces of bone having been discharged in past years from openings, the scars of which were still evident; on the left side, extension was equally impossible, from contraction of the ham-string muscles. The bones of the right ankle-joint were extensively carious, as shown by a probe admitted through numerous fistulous openings. Over the superior posterior spine of the left ilium there was a fistulous opening, and the probe detected a movable sequestrum, of the size of a large bullet.

Within the space of three months, at several operations, the contracted tendons and muscles were all divided, the thighs made straight upon the body and the left leg upon the thigh, the sequestrum from the back removed, and the right leg amputated. The patient was discharged very much improved in his general health, from the removal of such causes of irritation, and his limbs were in such a situation as to furnish a hope of their future usefulness.

The bones of the ankle from the amputated leg present a fine specimen of old caries, the result of tubercular deposit, and are preserved in the Society's cabinet.

December 22.—*Scirrhous Tumour.*—Dr. MINOT exhibited the specimen, which was of about the size of a large chestnut. The patient was a woman of eighty years, whose right breast had been removed by Dr. J. M. Warren, for carcinomatous tumour, four years ago. Since that time she had no symptom of return of the disease, until about a year ago, when she perceived a small, hard lump in the cicatrix left by the operation. It was, at times, quite

painful, and continued to increase slowly in size, until its removal, on the 20th of December.

Dr. Warren remarked that the case was an interesting one, on account of the age of the patient and the great length of time during which the disease had existed, without producing any apparent general effect upon the system. He removed the breast in October, 1847, at the Massachusetts General Hospital, at which time the patient gave the following account of her case. That she had always enjoyed good health, with the exception of the present disease; when quite young, a "boil" formed near the nipple of the right breast, which, after discharging, left a permanent induration at the spot. This induration gradually increased, and had troubled her more or less for the last *twenty* years. At the time of the operation, the whole breast seemed involved in the disease, the nipple was retracted and a bloody serum issued from it. The edges of the wound were brought into apposition after the operation, and healed without any untoward symptom.

Dr. Warren mentioned another instance of recurrence of cancerous disease, lately observed by him in a woman of sixty-five years. Eleven years ago he was called to the patient, who had been tampered with by a "cancer doctor." Dr. W. removed the tumour then existing, together with some indurated axillary glands. For ten years she was perfectly well. Dr. W. then had occasion to remove a small mass from the cicatrix. Milk remained in this breast for three years after nursing her last child, and there was none in the other breast. Habitual obstinate constipation, even to the extent of sixteen days without an evacuation of the bowels, accompanied by nausea, afflicted the patient.

Dec. 22.—*Molten Lead poured into the Ear with Murderous Intent.*—Reported by Dr. ALLEY: the patient being at New Orleans, in the Charity Hospital, under the care of Dr. WEDERSTRANDT. A man, after a fit of intoxication from whiskey, awoke up with an uneasy sensation about his head and right ear. On examination by his physician, it was found that a quantity of melted lead had been poured into his ear while he was in a state of insensibility; it occupied the meatus externus, and how far inward it had extended it was difficult to determine. The lead was so firmly imbedded, however, that it was proof against extraction by the most skilful efforts. The man did not complain of excruciating pain, but was anxious about the final result. The opinion expressed at the time was that there was no immediate danger to the man's life, but apprehensions were entertained that inflammation would be lighted up by the presence of the lead in the surrounding structures, which, if propagated to the brain, would, without doubt, be productive of serious results. The opinion rested in part on the invaluable observations of Abercrombie and Watson, both of whom dwell particularly on the danger and frequency of inflammation of the brain and its membranes supervening on otorrhœa and caries of the bones of the ear. Bearing in mind the anatomy of the ear and the thickness of the petrous portion of the temporal bone, and also the rapidity with which lead cools, and the difficulty of causing it to run through small openings, no danger was apprehended of its coming into immediate contact with the brain by taking the course of any foramina of the internal ear. The man remained a week or two in the Hospital, and all he complained of, during that time, was deafness in the ear affected, with obtuse pain and palsy of that side of the face, the result of injury of the portio-dura of the seventh pair of nerves.

He finally left the Hospital, and resumed his occupation as a labourer on the wharf, and came occasionally during several months to visit his physician,

the lead always remaining firmly fixed in his ear, accompanied with a profuse purulent discharge. It was supposed that suppuration would in time be established, whereby the lead would be loosened, like any other foreign substance, and be expelled from its situation. About three weeks since he returned to the Hospital, the lead still in his ear, although seventeen months have elapsed since the accident.

Feb. 9.—A letter from the house-surgeon, Dr. W., under date of January 26th, represents that the man called at the Hospital early in January to obtain medical advice. He was nearly in the same state as at the last report, able to follow his occupation as a daily labourer. The paralysis of the right side of the face, the pain on that side, the discharge from the ear, were the same—but there was a difficulty in closing the eyelid on the palsied side, which caused a profuse lachrymation. The lead could be distinctly felt, and was as firmly impacted as ever. A fungous growth occupied the meatus externus. Dr. W. justly remarks, that considering the length of time which has elapsed since the accident, it is remarkable that the lead should not have been loosened, or that inflammation of the membranes of the brain should not have been occasioned by the presence of a foreign body, which was only separated from them by the petrous portion of the temporal bone.

Dec. 22.—*Sudden Disappearance of a Tumour in the Breast.*—A woman applied to Dr. CHAS. E. WARE in the seventh month of pregnancy. She had a tumour in the right breast, which she had first observed about two years before; it was then about the size of a hazelnut. As it gave her no inconvenience, she paid no attention to it. About six weeks before she applied to Dr. Ware, she noticed that it was increasing, and she began to experience sharp lancinating pains in it.

When Dr. Ware saw it, it appeared to be about half the size of a pigeon's egg, situated in the right breast, about an inch and a half from the nipple, towards the axilla. It was pretty well defined, and not tender on quite rough handling. There was a blush of red on the skin over it; but that, the woman said, had come on that morning, and was owing to the pressure of her dress. She was too large and fleshy to enable one to decide whether the tumour was in the gland or over it. The skin did not move very freely over it, although it did not appear to be involved in the disease. The glands in the axilla were not in the least degree swollen or tender.

Considering the uncertainty of its nature, the objections which there would be to removing it during lactation, should it be found necessary or expedient, the danger of delay if it should be malignant, and its apparently isolated character, she was advised to have it removed. She hesitated about the operation, and in about three weeks the tumour had entirely disappeared without treatment.

Dr. Ware also alluded to a case which he had reported to the Society some years since, of a small tumour of the side, which had existed for about twelve months, and which was increasing in size. The woman, however, preferred the advice of a mesmerist, who recommended her to touch it with her own saliva daily. She got rid of the tumour in about a fortnight. Probably the active condition of the tumour which induced the patient to apply for advice, was the cause, in both instances, of its removal.

ART. V.—*Contributions to the Rational Therapeutics of Acute Inflammation.* By E. B. HASKINS, M. D., Clarkesville, Tennessee.

General Pathology of Acute Inflammation.—Inflammation as a general, as well as a local pathological phenomenon, may be viewed under two aspects, according as it arises from causes which act, *manifestly*, first upon the solids, causing their lesion, and secondarily upon the blood, as wounds, bruises, burns, &c.; or, from causes which act, *seemingly*, first upon the constitution of the blood, and secondarily upon the solids, as cold, in the production of pneumonia, bronchitis, &c.

1. *As arising from manifestly local causes.*—A mere scratch, or slight incision of the external surface, or abrasion of the mucous membrane, will generally be repaired without any febrile disturbance (and often without even the local manifestations of inflammation, as in Macartney's "mediate" and "modelling" processes*), the amount of plastic matter in the blood being always sufficient, and the existing nutritive force fully adequate, to repair such slight lesions as the daily accidents of life give rise to.

But when the local injury is more extensive, or a predisposition to inflammation already exists in an exalted degree, besides the local manifestations of pain, heat, redness, and swelling, a general febrile movement is set up, and the fibrin of the blood increases in quantity.† This increase of fibrin will be more or less considerable, according to the extent of the injury to be repaired, or the degree of existing predisposition to inflammation. When the predisposition is not great, and the local lesion not very extensive, the excess of fibrin will not be considerable, and consequently the febrile reaction not very high.

In this case the morbid (?) action will speedily terminate in a reparation of the lesions; the constitution sustaining no serious or permanent injury from the accident.

But when a predisposition to inflammation exists in a high degree, and the local lesion has been sufficiently extensive to excite febrile action, then an excess of fibrin beyond the wants of the organism will be produced, that must find an exit from the vascular system; either in the form of mucus upon the mucous membranes, in that of coagulable lymph upon the serous membranes, or in the interstices of parenchymatous structures; or in the form of pus upon the surface of the breach, or by the formation of abscess; resulting in imperfect recovery, or perhaps, terminating in death.

* Macartney's first, or *immediate* process of union, "without any intervening blood or lymph," cannot, at this day, be admitted.

† "The formation, then, of an excess of fibrin in the blood is uniformly the accompaniment of inflammation of a grade high enough to give rise to fever."—*Andral on the Blood* (Meigs and Stillé's trans.), p. 78.

2. *As arising from cold, &c.*—In order to be fully comprehended under this head, it may be proper to state the following received physiological facts: 1st. That in the peripheral vascular system, the tissues of the animal body are undergoing constant and rapid solution or decay, and repair. 2d. That fibrin is that form of the protein compounds which is chiefly used in the functions of nutrition and reparation. And, 3d. That a certain amount of heat is requisite to the performance of these functions. These facts being premised, it is not difficult to arrive at a satisfactory explanation of the phenomena of inflammation arising from the impression of cold. By a *sudden*, or *continued* subduction of the animal heat, under certain predisposing conditions (to be noticed more fully hereafter), the function of nutrition is arrested.

This arrest of nutrition, or cell growth, or reparation of dissolved tissue, results, virtually, in points of local lesion; the aggregate of which will be more or less extensive and complete, according to the degree of resisting force, and the severity and duration of the cause, &c. Such *points* of local lesion as here considered, though removed from the cognizance of the senses by their minuteness and dissemination, are none the less *real* and *potent*, and certainly must exercise the same influence upon the organism that other and *manifestly* local lesions do; to wit, the excitation of fever, with an increase of the fibrin of the blood.

In this case, the increase of fibrin may be *positive*, from the more rapid generation of fibrin from the other protein elements* of the blood; or it may be *negative*, from the temporary retardation of the nutritive process; or it may arise partly from both of these sources.

When the predisposition is but slight, and the cause (cold) has not acted long or violently, the febrile agitation will be moderate, and the slight excess of fibrin will be quickly consumed in the process of reparation, the organism recovering from its condition without any particular local determination. This would be properly termed an *inflammatory fever;* and every observing practitioner can attest to the frequency of such cases, where, after exposure to cold, a general febrile action sets up (preceded often by a paroxysm of shivering) with restlessness, hot skin, headache, full and frequent pulse, and a soreness over the whole surface, and often through the entire system of voluntary muscles, that terminate in from twelve to forty-eight hours, in profuse sweat.

Such cases usually leave the patients in that "sore" condition for the space of several days; they feel as though they had been "beaten all over with a stick."

When, however, the *predisposition* to inflammation is great, and the cause (cold) has acted long or violently enough to excite a febrile movement, then the increase of plastic matter will be so excessive as to cause the overloaded and oppressed vessels to pour out their accumulated fibrin at some part of

* See following note.

greatest *local* predisposition, determining a grave, or may be fatal, pneumonia, bronchitis, or some other of the acute phlegmasiæ.

It will now be assumed, and I presume no one will deny its accuracy and truth, that in every healthy subject there is maintained in the blood a definite relation of quantity between the fibrin, and the material out of which the fibrin is formed, which material will be here termed albuminous matter.* That when that relation is disturbed, either by excess or deficiency of fibrin, or excess or deficiency of albuminous matter, the healthy state of the blood is correspondingly disturbed. In other words, that, in order for the maintenance of healthy blood, there must exist a constant definite ratio between the fibrin and albuminous matter. It is not denied, however, but that the ratio varies, in different constitutions, according to sex, temperament, &c.; and in the same constitution, according to age, &c.†

Inasmuch, then, as the excess of fibrin in the blood so constantly occurs during a course of acute inflammation, pathologists are prone to look to the blood for the morbid cause that constitutes the predisposition to the disease, and it will now be appropriate, for the better understanding of the general pathology, and fuller appreciation of the rules of treatment, to recur, briefly, to the *general predisposition* to acute inflammation. In the first place, it may be remarked that all subjects, however healthy, being liable to local injuries, either from mechanical and chemical causes, or from the powerful impressions of cold, are liable to attacks of inflammation. But there are

* That the fibrin of the blood is *ultimately* derived from the albumen, there can be no doubt; yet physiologists have not agreed as to its *immediate* origin. Dr. Simon (Chemistry of Man) has made a very learned and ingenious argument in support of the hypothesis that it is derived directly from the nuclei of the red corpuscles; whilst Dr. Carpenter (Human Physiology), with no less learning and ingenuity, insists that the fibrin is elaborated out of the *colourless corpuscles.*

As a settlement of this question, however, in no way affects the doctrines of this paper, it will not be here discussed, but held, for the present, *sub judice.*

† Thus, in a table deduced from the analyses of Dennis, by Simon, the *mean* differences of the blood of males and females of the same age stand as follows:—

Male—Water	758.0.	Blood-corpuscles	147.0.	Albumen	57.5.	Fibrin	2.5.
Female "	773.0.	"	138.0.	"	61.2.	"	0.27.

Again, from another table drawn up by Simon, from Dennis's analysis, 1000 parts of male blood, at the ages of 14, 40, and 80 years, contained:—

Age.	Water.	Solid residue.	Fibrin.	Blood-corpuscles.	Albumen.
14 years	750.4	249.6	4.0	162.2	58.0
40	750.0	250.0	2.5	167.8	55.1
80	781.0	219.0	2.5	130.4	61.0

And, "according to Lecanu, 1000 parts of blood contained on an average" in men of

Sanguineous temperament, Water 786.584, Albumen 65.850, Blood-corpuscles 136.497.
Lymphatic temperament, " 800.566, " 71.781, " 116.667.

For further details, consult Day's edition of Simon's Chemistry of Man, pp. 194–6.

subjects who are liable to attacks from causes that do not affect the generality of men, or who are liable to very grave attacks from causes that produce but slight and transitory attacks in others. These subjects are the *predisposed*, and it is to *this* predisposition that I now desire to direct attention.

When an irritating substance finds its way into the stomach, it is usually thrown out by vomiting; when into the intestines, it is expelled by purging; when a foreign substance "gets into the eye," it is washed out by a flood of tears; when it gets into the nose, or trachea, it is ejected by sneezing, or coughing; and when the blood is surcharged with water, it is usually passed out by diuresis or diaphoresis, &c. &c. Then, as acute inflammation always terminates the general febrile action, by effusion* of proteinaceous matter, according to strict analogy we are led to conclude that *this effusion is necessary to restore the blood to a healthy state.* But this conclusion does not rest alone upon analogical reasoning. It is also supported by the fact that nearly all of the most potent remedies in inflammation act in *imitation* of those natural efforts of cure by virtue of their *defibrinating* agency.† And this conclusion is still further supported by the well-known fact that the suppression of cutaneous eruptions, the drying up of old issues and healing up of old sores, circumstances which give rise to an accumulation of proteinaceous matter in the blood, highly predispose to grave attacks of acute inflammation. The liability to inflammatory attacks of those recovering from sickness, who eat largely and digest well; of hearty consumers of rich animalized food to gout and acute rheumatism,‡ may also be noticed in corroboration of what has already been said.

But what *form* of proteinaceous matter in the blood is it the excess of which predisposes to acute inflammation? Is it the fibrin?

The researches of M. Andral settles this question conclusively in the negative. "The increase of fibrin in the blood," says he, "takes place from the very commencement of the inflammatory state. I have frequently had the same individual bled twice; the first time on the day previous to the inflammatory attack, and the second time a few hours after its distinctly marked invasion. The first time the fibrin of the blood was normal; the second, in excess." (*On the Blood*, p. 75.)

Then an excess of fibrin in the blood is the *product*, and not the *cause*, of

* The termination is not always by *effusion*, in the sense in which this term is usually understood. It may be by a *secretion*, as of mucus or pus (allowing *pus* to be a *secretion*), or by nutrition, reparation, &c. The term is here used in a *generic* sense.

† See remarks on General Therapeutics.

‡ At first sight, gout and acute rheumatism would seem to form an exception to the general law of acute inflammation, *that the febrile action terminates by an effusion of proteinaceous matter;* but on a second view the law seems still to maintain. Although it is not so taught, I think it would be no difficult task to show the probability that the immense discharge of uric acid and its salts, by the kidneys of such patients, is derived directly from the fibrin of the blood, instead of from the debris of the tissues.

the inflammatory attack. But, as the effusion of fibrin restores the blood to a normal state, and as that excess is derived from the albuminous matter, it is fair to infer that the reduction of this albuminous matter is also necessary to the normal state of the blood, and, therefore, that it is *an excess of albuminous matter that constitutes the predisposition to acute inflammation.*

From all that has now been said, the following law may be deduced: *that, whenever there is an excess of albuminous matter in the blood, and a cause acts upon the system, so producing solution or lesion of tissue as to excite an increased movement of the blood, with increase of fibrin, the organism makes use of such a time to free the vascular system of the excess of albuminous matter,* and restore the blood to a normal state.*

In other words: *the injury, besides its influence upon the integrity of the tissues, enhances the irritability of the vascular system in such a degree as to render the excess of albuminous matter so intolerable as to cause an immediate and rapid increase of the circulation, that serves not only to repair the breach, but to remove the excess of albuminous matter, and restore the blood to its wonted healthy condition.*

This view of the subject derives further support from the following observations of Andral, as well as explains the phenomena he observed: "In the second series," says that distinguished observer, "other facts present themselves. The inflammation seemed to be suspended; the pulse lost its frequency; and the only remains of the disease were a greater or less effusion into a serous cavity. The blood then ceased to contain an excess of fibrin."† Again, "How many times, for instance, have I not continued to find, by auscultation, the perfectly distinct signs of pulmonary hepatization, when, for several days before, all fever, and every appearance of reaction between the lungs and the system, had completely disappeared; so completely that, but for auscultation, one might have believed the disease at an end.‡ And indeed it was so in this sense, that the lesion of the lung was only the result, and almost an unimportant one, of a morbid action that had ceased; thenceforth the fever also ceased, and the production of new fibrin, the index of this process in the blood, no longer took place. The disease had once more become entirely local, if indeed such a condition of the lung deserves the name of disease."§

Now what, it may be asked, caused the cessation of febrile action and in-

* Andral concludes from his observations, and certainly they were numerous and faithfully made, that, "when once the blood set about producing an excess of fibrin (and, of course, reducing the excess of albuminous matter), no matter what is done, a certain time must elapse (that time required to restore the blood to a healthy state) before this disposition is exhausted."—*Andral on the Blood* (Meigs and Stillé's trans.), p. 91.

† Andral on the Blood, &c., p. 73.

‡ Louis, Alison, and others bear testimony to the same fact—that the febrile action often ceases before the effusion disappears; and it is presumed that every experienced practitioner has witnessed the same phenomenon.

§ Andral on the Blood, p. 77.

crease of fibrin in these cases, if it were not that the blood had returned to its normal state—that the excess of albuminous matter had been consumed in the elaboration of fibrin, which had, in turn, been thrown out of the circulation *as a critical discharge*, constituting the *fibrinous dropsy* of Vogel?

It will not be denied, however, that the local effusion may so injure the integrity of the tissues involved, as to cause them to *react* upon the system, and thus keep up the febrile action, *after* the blood has become normal. Andral observed this to take place in a case of peritonitis;* and it may be inferred that it has occurred, and will occur in other cases.

The *secondary* lesion from cold (the *primary* being the lesion of nutrition in general) may act as a secondary cause of febrile action, just as the primary local injury from wounds acts as a primary cause of fever. The secondary lesion has to be repaired, particularly after suppuration, mortification, ulceration, &c., by a process of plastic *accretion;* and, as that reparation does not take place *during* the albumino-fibrinous elimination, it must be done, if at all, *after* that period.

It will now appear that acute inflammation is marked by four periods or stages:—

1st. The period of *primary lesion.*† 2d. The period of *fibrination* (of the blood), and *primary separation.*‡ 3d. The period of *defibrination* (of the blood), and *secondary lesion.* And 4th. The period of *secondary reparation.*

The first period is never attended with fever; the second and third always are. The third period often quickly succeeds the commencement of the second, and then progresses simultaneously with it.

The *pain* sometimes felt even before the second stage, and often at its commencement, is no sign of the actual presence of the secondary lesion; but only of that local *erethism* and congestion that precede the effusion, and indicate the point where the lesion will take place.

The fourth period may or may not be attended with fever. It may consist only in the absorption, or further organization of the effused lymph. And

* "During the earlier stages, I had her bled twice; the blood gave 5.3 and 5.4 of fibrin. The peritonitis lost its intensity after this depletion, but was not cured, and gradually passed into a chronic state. The patient was already much emaciated, when I endeavoured, by another bleeding, to diminish the fever, which had never for a moment ceased. This time the blood contained only 3.5 of fibrin. After the bleeding, there was no improvement, and the patient sank speedily. The intestinal convolutions were united by organized false membranes, and the pelvis was filled with pus."—*Andral on the Blood* (Meigs and Stillé's trans.), p. 73.

† It is allowed that there may be cases where the predisposition is so great, that is, the albuminous matter so excessive, that a *spontaneous* fibrination commences the attack; as in some cases of gout, when no degree of protection from *cold* seems to guard the subject from a seizure, and his only safety lay in a proper regulation of diet, &c.

‡ The speedy manner in which lancet punctures, blistered surfaces, &c., heal during the fever, shows conclusively that the "formative power" (as Carpenter expresses it) of the tissues is *not* appreciably lessened.

when there is a breach of continuity, even then the accompaniment of fever will depend upon the severity of the breach compared with the reproductive energies of the organism.

The reader will bear in mind, however, the difference between *acute inflammation*, and those lighter attacks of indisposition, with inordinate mucous secretion, and sometimes slight irritative fever, vulgarly termed *colds*. Notwithstanding *colds*, or catarrhs, and acute inflammation meet on an indefinable line, yet the condition of the organism predisposing to these two classes of morbid actions is by no means the same. I dare say it is the experience of every observing practitioner that those subjects who are most liable to colds are those who are less liable to acute inflammation.

That impressibility of the system to the lighter impressions of cold acts as a safety-valve, if I may so speak, to the organism. The blood is thus kept free from that excessive accumulation of proteinaceous matter that would require a most active febrile movement, and fearful fibrinous effusion for its final elimination.

My own person is not an inapt illustration of the truth of what is here said. From very early childhood I was peculiarly subject to colds; indeed, for many years I scarcely knew what it was to be free from excessive discharges from the nasal and bronchial mucous membranes. About the age of puberty, this great susceptibility to mucous fluxes had in a measure ceased; when, in the place of colds, I began to suffer frequent attacks of inflammatory fever, with a heavy uneasiness in the right side and shoulder (lasting from twenty-four to forty-eight hours, &c.). These attacks grew severer, as the intervals were longer, passing first into *latent* pneumonia (of the right side), and afterwards into a severer form; the last two attacks presenting all the rational as well as physical signs of that disease.

The doctrine of the general pathology of acute inflammation being in no settled condition, I deemed it requisite to make the foregoing exposition, in order that the *general treatment*, now to be considered, may be the better understood.

It may be noticed by some that nothing has been said respecting the part the nervous system bears in this disease. This omission has not resulted from a want of due regard for the importance of that system in the vital economy; but because I have been unable to discover any phenomena involving that system, apart from its general participation in the great function of tissual metamorphosis. During the first period, that of *primary lesion*, the brain and nervous system present the most evident signs of arrest of nutrition by the mental obtuseness and languor, whilst under the depressing influence of the cause (cold). And in the second stage, that of *fibrination of the blood, and primary reparation*, the brain and nervous system evince their participation, also, in the general re-establishment of tissual nutrition. That the nervous system may also excite sympathies between organs and functions brought into relations by it, I do not deny; but such sympathies are too little

understood by *me* to be introduced here in a manner to throw any light upon the subject under consideration.

General Therapeutics of Acute Inflammation.—I will now endeavour to analyze the medicinal powers of some of those agents that *experience* and *observation* have proved to exert a controlling influence over acute inflammation; examine their effects, as far as practicable, upon the healthy as well as diseased organism; and, if possible, deduce the general laws of their action: whereby, I trust, I may further elucidate the truth of what has been already said, as well as establish some plain practical rules for their better therapeutical application.

I. *General Bloodletting.*—I need scarcely say to the enlightened reader that, in the abstraction of blood, the constitution of that fluid is not immediately altered; that, notwithstanding the positive amount of blood in the system is lessened, the constituent elements remain, *relatively*, undiminished. Then, as the albuminous matter still exists in a relative, and may be positive, excess; and since it has been shown to be a law of the organism, *that, when once the blood begins to reduce the excess of albuminous matter by its conversion into fibrin with febrile action, the process continues until the blood becomes normal*, it legitimately follows that the increase of fibrin, and consequently the febrile action, will not be arrested by bloodletting. But, as the albuminous matter, or source of fibrin is from this cause lessened, *positively*, it likewise follows that the time required for its excess to be elaborated into fibrin, and subsequently effused, will be thereby shortened, the acme of disease sooner reached, and the crisis hastened.

It may also be deduced, that the efficacy of bloodletting will not be confined to the commencement of the inflammatory process; but will be efficacious at any time before the completion of the fibrinous effusion—that is, before the blood has thrown off its excess of albumino-fibrinous matter.

And further, that the influence of bloodletting will be more prompt in arresting or mitigating the symptoms dependent upon the effusion (in other words, the *secondary lesion*) as the *time* is nearest the maximum of fibrination; because, *then* the largest quantity of fibrin will be extracted by the bleeding.

Now, the foregoing are rational deductions from the pathology of inflammation. But reliable observations have already anticipated these deductions.

M. Louis, in summing up the results of his investigations of the effects of bloodletting in inflammatory diseases, &c., says, "that bloodletting has a happy effect on the progress of pneumonitis; that it shortens its duration; that this effect, however, is much less than has been commonly believed; but that patients bled during the first four days, recover, other things being equal, four or five days sooner than those bled at a later period."*

The experiments and observations of M. Andral confirm the above conclu-

* Researches on the Effects of Bloodletting, &c., by Prof. Charles A. Louis (trans. by Putnam), page 48.

sion of Louis: "Now it is found that, however repeated or abundant the bleedings, the fibrin increases none the less, if these bleedings are performed in the early stages of an inflammation of some intensity; or, in other words, at the period of the ordinary increase of the disease. * * * * Let it not be thought, however, that I deny the utility of bloodletting when properly employed in this class of diseases. Experience has taught me that, without removing them suddenly, it often abridges their duration, and conspires to bring about a favourable issue."* With respect to the efficacy of bloodletting not being confined to the beginning of the disease, M. Louis says: "In a great majority of cases, when bleeding was not employed until after the fifth day of the disease (pneumonitis), the pulse was less rapid on the following day; and this amendment went on increasing subsequently."†

And touching the more prompt influence of bloodletting over the *secondary lesion*, being nearest the acme of fibrination, the same author says: "In the cases now before us, as in those examples in the previous chapter, the influence of bloodletting upon the progress of the symptoms of pneumonitis has been unimportant, unless sufficient interval has elapsed between the attack and the venesection."‡

It is true Louis ascribes this effect to the fact "that the disease had then more or less approximated its natural termination;" yet it will be seen to follow as a corollary to the foregoing established pathological premises, and should, therefore, contribute to the formation of the basis of therapeutic rules.

The researches of M. Louis, however, do not cover the entire ground of the value of bloodletting in acute inflammation. In puerperal peritonitis, the value of this agent cannot be inferred from his experiments. Observations directed particularly to this subject have clearly proved the contrary.

Dr. Gordon, of Aberdeen, reports fourteen cases of puerperal peritonitis treated *without* bloodletting, of which eleven died and three recovered; and eighteen cases treated *with* bloodletting (and purgatives), of which only four died and fourteen recovered. Dr. Armstrong relates forty-three cases treated by bloodletting and purgatives, with only five deaths, and remarks that, when not early subjected to this treatment, they are almost "always irremediable." Dr. Gordon bled to twenty-four ounces, and his cases usually terminated in convalescence on the fifth day of disease. Dr. Armstrong bled from twenty-four to thirty ounces, and his cases convalesced on the fourth and fifth days; and Mr. Hey, another trustworthy observer, drew from thirty to fifty ounces of blood, and his cases were generally terminated in two days;§ thus showing most conclusively the superior efficacy of bloodletting in this particular

* Andral on the Blood in Disease, &c. (Meigs and Stillé's trans.), pp. 90, 91.

† Louis's Researches on Bloodletting, &c. (Putnam's trans.), p. 35. ‡ Ibid.

§ The History, Pathology, and Treatment of Puerperal Fever, &c. (including the Essays of Gordon, Hey, Armstrong, and Lee), with an Introductory Essay. By Charles D. Meigs, M. D. Philada., 1842.

form of inflammation, and that, too, in a direct ratio with the *quantity* abstracted.

But, it will be inquired, why this difference in the general value of a remedy in diseases possessing the same common characteristic? and how are these facts made to harmonize with what has just been said of the therapeutic value of bloodletting in acute inflammation in general?

It will be remembered that, in the acute phlegmasiæ that have been considered, an excess of fibrin does not constitute the *predisposition* to disease, but is the *product* of the inflammatory action; that an excess of *albuminous matter* constitutes the predisposition; and that a certain amount of febrile action is necessary to prepare the blood for the fibrinous effusion. In the case of puerperal fever, however, no such anterior preparation is necessary. The blood in puerperal women already contains an excess of fibrin; it has already the inflammatory constitution, and needs only to pour out this excess of fibrin to be restored to its normal state. Hence the more rapid course of this disease, and, consequently, the more urgent demand for *early* bloodletting to anticipate the too often fatal effusion. The blood, at the *onset* of this disease, is in the same condition that it is at the acme of fibrination in the ordinary phlegmasiæ from cold, and, consequently, the same rules for bloodletting alike apply in the two conditions.

From what has been premised, the following therapeutic rules may now be laid down:—

1st. Bloodletting may now be practised with benefit in acute inflammation at any time within the *second* and *third* periods of the disease; that is, from the commencement of the febrile action to the completion of the fibrinous effusion; but the earlier it is practised, the better.

2dly. *After* the acme of fibrination, bloodletting should be used cautiously.

3dly. *After* the third period, that is, after the completion of the fibrinous effusion, if no *fever* exists, and the vital energies of the organism remain, moderate bloodletting may be proper to facilitate the absorption of the effused matter, and thereby hasten and complete the resolution.

4thly. Bloodletting will be altogether improper in the secondary fever, consequent upon the secondary lesion, for then the fever is asthenic in its character.

5thly. The aggregate quantity of blood drawn should depend upon the probable degree of excess of the albumino-fibrinous matter.

6thly. The *number* of bleedings, and the *quantity* of blood drawn at each bleeding, will depend upon the *time*, in the course of disease, of the first bleeding; the probable *rapidity* of the course of disease; and the *impressibility* of the system to the loss of blood. *a.* If the first bleeding be practicable early in the second period, and the course of disease *not* rapid, or the system very *impressible*, the quantity of blood taken should be small, and the desired amount reached by a repetition of the process. *b.* If the course of disease be rapid, or the system quite tolerant of the loss of blood, one decided bleeding

will suffice. c. If venesection be not practicable before the acme of fibrination, the *quantity* desired should be taken at one bleeding, to be more or less great according as the effusion is likely to be more or less grave, or the *time* more or less approximates the acme of fibrination.

7thly. In the *performance* of venesection in acute inflammation, the patient should lie in a *horizontal* posture, and the blood drawn from a *moderate sized* orifice.

II. *Vesication.*—The *modus operandi* of blisters in the alleviation or cure of acute inflammation seems, if possible, to be less understood generally than that of the agent already noticed.

Louis acknowledges his ignorance upon the subject, and is even skeptical of their efficacy at all. But, had that indefatigable experimenter taken the trouble and pains in the investigation of the remedial value of this agent that he did in that of bloodletting, I doubt not he would have found another instance in which a patiently-formed professional opinion (though not founded upon the modern numerical plan) had not erred in determining the *reality* of a medicinal agent, although it may *not* have estimated its exact *value.* That vesication possesses a real value in the treatment of inflammatory diseases, will not be here discussed. I am willing, at present, to rest my faith upon the general experience of the profession. My only aim shall be to inquire more closely into its mode of action than has hitherto been done, that we may be guided in its therapeutical application by rules more rational, and, I trust, more safe than at present govern the profession.

When a vesicant of sufficient extent is applied to the skin of a healthy subject, it produces all of the general phenomena of a severe wound.* The pulse becomes accelerated, the tongue dry, the skin hot, and the fibrin of the blood increases in quantity. Upon the surface of the breach, serous matter, charged with albumen, is poured out; whilst the process of healing, or formation of new cuticle, quickly sets up. The sero-albuminous effusion and plastic formation gradually exhaust the excess of fibrin, the blood returns to the healthy state, the febrile action subsides, and all the functions of the system resume their normal action. Should the subject, however, be in a state of predisposition to acute inflammation, then other phenomena will arise. The denuded surface will assume a fiery-red appearance, and instead of a *healing,* a *suppurating* process will ensue; pustules and phlegmonous abscesses will form in the neighbourhood of the blistered surface, or, may be, secondary lesion in a vital organ will take place, thus protracting the *time* and enlarging the *channel* of egress to the fibrinous matter.

Vesication, then, by making a new breach upon the vital structures, gives a renewed impulse to the formation of fibrin and the momentum of febrile action.

* Andral found an increase of fibrin in a case of severe burn. See Essay on the Blood. By G. Andral (Meigs and Stillé's trans.), p. 72.

Blisters, therefore, do not protect directly the organ or tissue sustaining the secondary lesion; for, notwithstanding the *demand* for fibrin is thus enlarged, the *supply* is correspondingly increased. But, as the febrile action is likewise increased, it may be inferred that the local injury will rather be augmented.

These remarks, however, apply only to that stage of the inflammatory process *anterior* to the acme of fibrination of the blood. *From* that period (when the excess of albuminous matter is exhausted) to the completion of the effusion, blisters *do* protect directly the part bearing the secondary lesion.

It will be seen, however, that, although blisters augment the violence of the inflammatory process when made anterior to the acme of fibrination, they nevertheless hasten the crisis, and thereby curtail the *duration* of the disease.

Vesication, then, can never be admissible in cases that threaten the integrity of the vital organs by the violence of arterial action and redundance of albuminous matter, *until that redundance has been reduced by its elaboration into fibrin, or by remedial means.* In such cases, *immediate safety* is sought rather than an *early crisis.*

In lighter attacks, on the other hand, where the symptoms do not reveal an excessively inflammatory state of the blood, vesicants may be applied early in the disease. In such cases, it may be proper to hasten the *termination* of the malady, though the violence of the morbid action is, for the time, increased, since it often happens that the foundation of chronic diseases is laid in the tardy and imperfect resolution of an acute inflammation.

During the period of *secondary reparation*, if no fever exists, and the only remains of disease consist in the fibrinous deposit, then a blister may hasten resolution and perfect the cure, by its defibrinating action reducing the albuminous matter *below* the normal standard, thereby hastening the process of absorption to restore the loss. But if the secondary lesion be of sufficient gravity to excite a secondary fever, blisters are clearly contra-indicated, for they add another drain upon the organism, and give a renewed impulse to a hectiform fever, without the possibility of contributing a single curative influence.

It is generally held that blisters are useful only so long as they are kept open, and when they are desired to act for a length of time, they are dressed with stimulating ointments that suppuration may be established. But, from what has been said of the defibrinating influence of the *reparative* process, it will appear that, in the *healing over* of blistered surfaces, perhaps the most valuable influence of this agent is procured. So strongly have I been impressed with this remark as a truth, that I have for several years endeavoured to heal the surface of blisters as soon as possible, preferring a *succession* of blisters to an open *suppurating* one, since suppuration, although defibrinating in its effect, is more irritating, and may, by some law as yet undiscovered, excite the suppurative tendency in the deeper-seated parts involved.

I will now take occasion to state that M. Andral has long since adverted

interrogatively to the effects of blisters upon the constitution of inflammatory blood, &c., in the following language:—

"But another influence of these revulsive agents, and one that has been less noticed, is that which they may have upon the composition of the blood, which they must modify by means of the materials which they extract from it. Thus a large blister takes from the blood a certain quantity of its serum; but, in addition, fibrin is deposited upon the raw surface produced by the action of the cantharides. If the blood should contain a superabundance of fibrin, would that be a means of diminishing its excess? Or, on the contrary, if the blister were large enough, if the resulting inflammation were very intense, if, above all, it increased the already existing fever, would there not result a new cause for the formation of an excess of fibrin in the blood, and would not this cutaneous inflammation, thus artificially created, to diminish the intensity of another inflammation, and by the sort of influence it would have on the blood, augment the morbid condition which represents the inflammatory state in the blood, and is the measure of its intensity?"*

In conclusion, it may be remarked that the *part* of the surface upon which the blister is to be raised seems not to possess that importance given it by most of the British and American writers. In making the election, the convenience and comfort of the patient should rather be consulted.

Summary of Therapeutic Rules.—1st. Blisters are *admissible* at any time within the course of acute inflammation, where the force and violence of the inflammatory process do not threaten dangerous lesion of vital organs. But they are not *indicated* unless delay of the crisis involves a compromise of the subsequent health of the individual.

2d. Blisters are indicated early (within the second period, or that of fibrination, &c.), in such cases as do not threaten *immediate* danger; but would compromise the future health of the subject by protracting the crisis of the inflammatory process.

3d. Blisters are contraindicated in violent cases, that threaten dangerous lesion of vital organs, until *after* the acme of fibrination.

4th. To hasten resolution, blisters are admissible in the fourth period (that of secondary reparation), provided *no fever* exists.

5th. If the secondary lesion excites a fever in the fourth period, blisters will be wholly inadmissible.

6th. Blisters should be healed as quickly as possible, and if a continued effect is desired, it should be obtained by a succession of fresh ones.

7th. The *part* upon which the blister is to be raised should depend mostly upon the comfort of the patient.

8th. The amount of surface proper to be blistered at one time will depend upon many circumstances to be determined in each particular case, remembering always that each blister is a new lesion or wound to tax the vital forces, and the greater the size the heavier will be the tax.

III. *Mercury.*—No remedy, it is presumed, is had recourse to more

* Andral on the Blood, &c. (Meigs and Stillé's trans.), p. 92.

extensively in inflammatory diseases than mercury, in some of its medicinal forms. It is used in *chronic* as well as *acute* inflammation—in cases purely *local*, as well as those involving *general* pneumonia—in inflammation arising from *specific*, as well as from *general* causes. And the claims of no agent, perhaps bloodletting excepted, to remedial efficacy, in acute inflammation, when properly applied, are better established. But when improperly used, there is scarcely any other agent fraught with more serious and lasting mischief to the constitution. Hence the lively interest to the profession of a more intimate knowledge of its therapeutic action, and the weighty importance to the diseased of more rational and safe rules for our guidance in its administration.

The first and most obvious effect of mercury upon the organism is to increase the biliary secretion; and, if its use be continued, the salivary glands and mucous membranes are also functionally excited. From this cause it is held that mercury acts specifically upon the glandular structures, increasing the activity of their physiological action. But it is observed that mercury acts also upon parts not possessing glandular characteristics. Under its influence indurated tissues are softened; indolent tumours are removed; serous, sanguinolent, and purulent fluids disappear. Hence, mercury is said, also, to act upon the absorbents, to be deobstruent, &c. It is also known to quicken the circulation, increase nervous irritability, and remove, by apparently insensible action, many obscure chronic affections; therefore, mercury is said to be a stimulant, alterative, &c. And when pushed too far, particularly in very young, anæmic or chlorotic subjects, offensive ulcerations of the mouth and throat, with sloughing of the gums, cheeks, and soft palate, and extremely fetid breath, will ensue, and often carry off the patient, in spite of the best directed efforts.

Seeing, then, that mercury increases the functional activity of glands, mucous membranes, brain, and nervous system, generally, the inquirer starts out with the interrogation as to what physiological action is common to all these organs or tissues; and in what way, if any, does such action stand related to the phenomena here cited. To this inquiry he is at once met with the answer, that tissual metamorphosis, that is, disintegration and nutrition, belongs to all living organized structures, and that the proper functional movement of all organs involves, directly, this great and essential function.

Then, when it is said that mercury increases the functional activity of the liver, mucous membranes, and brain, it is all the same as saying that it hastens the metamorphosis of these structures—that disintegration is accelerated directly, and nutrition indirectly.

And when it is considered that the functions of secreting structures, the brain, and nervous and muscular* systems, are the only processes of meta-

* As the *nervous excitement* created by mercury is manifested both by restlessness of the body, as well as irascibility of mind, the phenomenon may, in part, be ascribed to excitation of *muscular* irritability.

morphosis cognizable to the senses; and that there exists no more histological likeness between the different organs here noticed than between them and the other tissues of the body, it is for the time concluded, by a reasonable generalization, that the entire function of tissual metamorphosis is hastened by the action of mercury. And here the inquiry rests, until other and more remote phenomena attendant upon the exhibition of this remedy are examined in their relation to this great function.

In the first place, the following will be laid down as a law of the animal organism: that, *whenever there is a demand for nutritious materials to supply the waste of essential vital tissues, and that demand is not supplied by the digestive organs, the absorbents take up first all such materials of nutrition within their reach, of the least vital connection with the living parts, to supply that demand; and that the activity of the process of absorption will be in a direct ratio with the extent and urgency of the demand.**

Inasmuch, then, as mercury is supposed to hasten tissual disintegration directly, and nutrition indirectly, and as this process creates a demand for nutritious materials—by hypothesis, the following effects would ensue on its use: 1st. All proteinaceous matter, capable of being absorbed, and re-converted into blood plasma for the nourishment of living tissue, would be removed, provided the new demand is not supplied by the digestive organs. Hence would follow the softening of indurated tissues; the removal of tumours, of serous, sanguinolent and purulent fluids, &c.

2d. All chronic diseases, dependent upon vascular or organic obstructions caused by proteinaceous concretions, or *non-* and *semi-vital* formations, would *tend* to vanish under a course of mercury—provided a requisite quantity of proteinaceous materials were not supplied in the food.

Hence would follow the relief of many obscure chronic diseases that prove intractable to other remedies.

3d. After the blood has become too poor to furnish plastic matter for tissual nutrition, if tissual disintegration be hastened to any considerable extent, uleration and death of parts will ensue.

Hence the ulceration of the mouth, and sloughing of the cheeks, gums, and soft palate, caries of bones, &c., from the use of mercury, in certain impoverished conditions of the body. But these phenomena have already been laid down as consequences, known to follow the exhibition of mercury, by *observation*. They, therefore, go far in support of the conclusion already drawn, by less *direct*, but not less *conclusive* line of inquiry.

It cannot but be obvious, now, the part which mercury performs in the cure of inflammation. By accelerating tissual disintegration, the demand for plastic

* It is not deemed necessary to adduce the proof of such a law; for, besides the known efficacy of low living in the removal of indolent swellings, &c., its analogue, in the assimilation and consumption of carbonaceous or respirable alimentary substances, is clearly seen in the phenomena of wasting of adipose tissue in disease, and the torpor of hibernating animals.

matter is enlarged, and consequently its consumption is increased—acting *internally*, like blisters, *externally*. Mercury, then, *hastens* the crisis of diseases; but, as it makes a new breach, it, at the same time, increases the *activity* of diseased action.

Then, as mercury hastens the crisis of inflammation by making a *new breach* (increased tissual disintegration), as it were, thereby enlarging the capacity for the consumption of fibrin, it will follow, hypothetically, that mercury, like blisters, excites an increase of fibrin in the blood. And, according to the researches of Andral, this is strictly true. This observer relates four cases of "acute mercurial stomatitis," in which the fibrin of the blood was notably increased, and remarks that "mercurial stomatitis, notwithstanding its specific nature, does not differ from ordinary inflammations in its influence on the blood; and yet it has been asserted, again and again, that one of the effects of mercury introduced into the system is to bring about a state of dissolution of the blood, which is incompatible with an increase of fibrin. It is possible that this may take place after a prolonged use of the mercury (after the proteinaceous matter has been reduced *below* the normal quantity); but assuredly such is not the case soon after its first exhibition."*

It is true, Andral ascribes the febrile action and state of the blood, in these cases, to the secondary lesion of the mouth; but, in the first two cases, he relates, this lesion was too trifling to account for the constitutional symptoms, and besides, every practitioner of experience, it is believed, has often observed the mercurial fever to come on *before* the stomatitis has made its appearance.

Summary of Therapeutic Rules.—It is believed the reader is now prepared, without further comment upon this agent, to appreciate the following rules for the administration of mercury in acute inflammation.

1st. Mercury is *admissible* at any time within the course of acute inflammation, where the force and violence of the inflammatory process do not threaten dangerous lesion of vital organs. But it is not *indicated* unless delay of the crisis endangers the subsequent health of the individual.

2d. Mercury is indicated early (within the second period, or that of fibrination) in such cases as do not threaten *immediate* danger, but would compromise the future health of the subject by protracting the crisis of disease.

3d. Mercury is contra-indicated in violent cases that threaten dangerous lesion of vital organs, until *after* the acme of fibrination.

4th. To hasten resolution, mercury is admissible in the fourth period (that of secondary reparation), provided *no fever* exists.

5th. If the secondary lesion excites fever in the fourth period, mercury is inadmissible.

IV. *Opium.*—The functional activity of the brain, and nervous and glandular systems, is manifestly lowered by the action of this agent; and direct experiment has proved that muscular irritability is weakened, and, indeed,

* Andral on the Blood (Meigs and Stillé's trans.), pp. 69 and 70.

annihilated by the immersion of muscular tissue in a solution of opium. And when it is remembered that the function of secretion is not dependent upon the brain and nervous system, and that accumulated experiments have proved that irritability of muscular fibre exists independent of its connection with the brain and spinal marrow, it can no longer be maintained that, in order for opium to reach these tissues and modify their action, it must do so through the intervention of the nervous system. But, on the contrary, it is more in accordance with facts and the present state of vital philosophy to ascribe to it a wider range of *immediate* influence—to ascribe to it the power of modifying the great function of tissual metamorphosis, whether of the brain and spinal marrow, glands and follicles, muscular fibre, or other tissues of the body.

Opium, then, may be said to have an action upon the organism the opposite of that of mercury. Instead of *hastening*, it *retards* or lowers the process of tissual metamorphosis.

It will be remembered that it has been shown that those agents which hasten tissual solution or disintegration, also hasten the formation of fibrin in the blood, as wounds, blisters, mercury, &c. The converse may now be assumed, that those agents which *retard* tissual disintegration also retard the activity of fibrination* of the blood.

Opium, then, by retarding the elaboration of fibrin, checks the rapidity of fibrinous effusion, and thereby *protects*, for a time, the integrity of parts sustaining the burden of secondary lesion. But it has been premised that the febrile action and increase of fibrin will not cease until the albuminous excess has been reduced, and the blood returns to the normal state; therefore, the crisis of disease is also protracted, and its course prolonged by this agent.

It will now appear that opium is *indicated* only in such cases as threaten, by the violence of the inflammatory process, immediate danger from serious local mischief. In such cases, *present safety* is sought in this agent, at the risk of a *protracted crisis.*

The inquiry may be here made, that, as the physiological action of opium is found to be similar to that of cold, why does not opium determine an attack of acute inflammation?

To this inquiry it may be replied that, as there are not a sufficient number of facts bearing upon this point, that a decided dose of opium in the predisposed will determine an attack of acute inflammation, can neither be *affirmed* nor *denied.* But, allowing that future experience may *negative* the proposition, even *then* the truth of the doctrine here set forth will not be affected, for a *similarity* of action does not constitute *identity* of action.

In the case of cold, it is supposed that the nutritive or plastic function of

* It should have been mentioned before that, whenever the terms *fibrination* and *defibrination* occur, they relate to the formation and reduction of the *excess* of that constituent of the blood. The terms are not the most appropriate I could desire; but I trust they fully convey my meaning without subjecting me to severe censure.

the *tissues* is first impressed, whilst opium, first mingling with the blood, *may* primarily act upon that fluid, arresting or retarding the "converting" process, and more remotely upon tissual metamorphosis, thereby allowing time for the adaptation of the nutritive function to the state of the blood.

It seems to be the experience of medical practitioners of reliable observation, that mercury and opium form a most excellent combination in certain inflammatory diseases; and, from what has been premised of the opposite effects of these two agents, it would appear that they are hypothetically incompatible. But when it is considered that the action of opium is expended before that of mercury commences, their incompatibility is more apparent than real.

Indeed, allowing that opium acts first upon the converting process of the *blood*, the combination of these remedies will be found theoretically to answer well the indication; for the opium, by retarding the fibrination of the blood, protects the part sustaining the local determination until the mercury excites elsewhere a more active demand for fibrinous material.

Summary of therapeutic rules.—1st. Opium is admissible in acute inflammation, at any time from the commencement of the attack to the acme of fibrination; except in such cases as do not threaten immediate death from the gravity of the secondary lesion, but endangers the future health of the constitution from a protracted crisis.

2d. Opium is *indicated* in such cases as threaten immediately grave or fatal lesion, by the activity of the inflammatory process.

3d. Opium is *contra-indicated* in such cases as endanger the future health of the individual by a protracted crisis; provided, the activity of the inflammatory process does not threaten immediately fatal, or grave lesion.

4th. Opium is inadmissible, in all cases, *after* the acme of fibrination.

5th. Opium may sometimes with advantage be combined with mercury, or used simultaneously with blisters, to control the energy of their therapeutic action.

Purgatives, leeches, cups, &c., claim some notice in a paper aiming to elucidate the rational treatment of acute inflammation; but it is presumed enough has been now said to enable every practitioner to understand *their* mode of action. Purgatives, besides exciting a flow of the watery element from the blood, also accelerate the physiological action of the mucous membrane,* thereby acting as a defibrinating agent, in a limited degree. Cups and leeches act only by virtue of the blood they extract, and therefore in no essential way differ from general bloodletting.

Tartar emetic, colchicum, &c., will not be here considered, notwithstanding their acknowledged efficacy in certain of the acute phlegmasiæ, since I have not sufficient data to enable me to place them amongst the rational therapeutic agents.

* Mucus and epithelium, of course, are known to be proteinaceous materials.

It is deemed hardly necessary to say that it does not fall within the province of this paper to discuss the modifications and combinations of remedial agents, made requisite, in individual cases, by age, temperament, idiosyncrasy, relative degree of tonicity and vital force, complication with other diseases, the organ or part suffering from local determination, &c. Such a course would lead us into the domain of *special* therapeutics.

General Prophylaxis.—Every attack of acute inflammation seems to render the system more liable to another attack, and as a repetition of this disease often lays the foundation of obstinate chronic disorders, a few remarks upon the prophylactic treatment of the *predisposed* will, it is believed, not be unacceptable to the reader.

The prophylaxis of acute inflammation embraces such means as counteract, or prevent the action, first, of the *predisposing*, and secondly, of the *exciting* causes.

1st. Having shown that the *predisposition* to acute inflammation consists in an excess of albuminous matter in the blood, it is at once obvious that whatever tends to prevent such accumulation in the blood acts as a preventive of the *state* predisposition.

The excess of albuminous matter in the blood arises from a disturbed balance between the supply of proteinaceous material to the blood, and the consumption of that material in tissual nutrition. The supply of proteinaceous materials *to* the blood becomes too great for the consumption of that material *from* the blood.

This disturbed balance of supply, and demand or consumption, may arise, on the one hand, from the too large consumption of proteinaceous aliment, for the wants of a healthy tissual nutrition; and, on the other hand, from a too tardy tissual metamorphosis, for a healthy "primary assimilation."

In the former case, all that is necessary is to curtail the amount of proteinaceous matter of the daily food.

In the latter case, besides lessening the proteinaceous aliment of the diet, means calculated to excite a more active tissual metamorphosis should be used; such as active, but temperate exercise of body and mind; friction over the skin; warm clothing, with stimulants and tonics if requisite.

2d. Cold, or a sudden and continued subduction of the temperature of the body, has been considered as the main *exciting* cause of acute inflammation.

In order for this agent to produce its effect, however, it is not necessary that the body be exposed to any particular degree of temperature, or for any definite length of time. The liability to the action of the exciting cause may be increased by subjecting the body, for a length of time, to a very warm temperature, thereby enlivening the cutaneous sensibility; or by exhausting exercises, which enfeeble the powers of resistance. Under such circumstances an attack may be excited by a less powerful action of the cause, than under more favourable conditions of the system.

Avoidance, then, of exposure to cold, excessive or continued, is the proper

means of protection against the exciting cause of acute inflammation. And to impart a healthy sensibility to the cutaneous surface, and secure a vigorous vital resistance, the body should be daily bathed in cold water, and freely exposed to the cool air; avoid exhausting exercises, and the influence of narcotic poisons; and use a diet reasonably rich in hydro-carbons.

ART. VI.—*The Microscopical and Histological Relations of Enchondroma.* By W. J. BURNETT, M. D. [With three wood-cuts.]

FOR the first description of this adventitious growth, as a product quite peculiar in its nature, we are indebted to Müller.

In the year 1836, at an anniversary of the Military Academy of Berlin, he alluded to some of the relations of this disease. But, two years afterwards, a very comprehensive description of it appeared in a work* quite remarkable for its time; and upon these labours of Müller may be said to be founded all our subsequent knowledge and descriptions of this product. He recognized the species, and so, in the consideration of the subject, we necessarily fall back upon the original description. This, however, is too well known to be quoted here; the disease is recognized as a formation of rather uncommon occurrence, and composed of a tissue exactly resembling that of normal cartilage in some of its earlier and in some of its transitory conditions. On these accounts it has, since Müller's description, been much more carefully described than other growths of an equally innocent nature. The number of alleged cases found in the records of medical science is comparatively small; and, in reading over the accounts of them, we cannot help feeling that much less obscurity would exist as to the true nature of many of them, had the observers, in their examination of its structural and other peculiarities, been as thorough as was Müller. For there are many fibrous tumours which, in all their gross aspects, so closely resemble true enchondromata, as not to be distinguished from them, except by a microscopical or chemical analysis; and in this fact, the value of which, in an histological point of view, cannot here be too strongly insisted upon, may be found the reason of some of those curious cases that have been recorded, and to which we shall soon have occasion to refer.

From the equally innocent nature of fibrous and enchondromatous tumours, the relations which they sustain to the surgeon, who is looking merely to the practical result, are the same. But the case stands otherwise with the physiological pathologist, who is seeking to thoroughly understand the relations

* Ueber den Feinerin Ban der Geschwülste. Berlin, 1838, pp. 31–49: or its translation by Charles West, M. D., London, 1840, pt. i. pp. 96–152.

which homomorphous morbid products hold to normal tissues. And the time has now arrived, I think, when these can be considered so important that no surgeon or medical man, however eminent he may be in the practical departments of his science, can be justified in pronouncing and recording his opinion of a morbid growth, unless it has been founded upon a careful analysis, either microscopical or chemical, of its structural characteristics.

According to Müller, enchondroma exists under two different relations, viz.: 1st. That connected with the bones; 2d. That of the soft parts.

Both the experience of Müller, and that which has been recorded subsequently, go to show that nearly every case of true enchondroma is in some way connected with the osseous system. In examining the recorded cases, as far as the literature of the subject has been accessible to me, I have found very few of which the nature was not doubtful, and which were met with in the soft tissues, isolated from osseous and cartilaginous parts. And, even of these last, I have been inclined, from histological motives, to entertain the opinion that *they* also necessarily had a primary connection of this kind.

Their origin and development in, or upon, tissues to which they are allied histologically, are not surprising, for it supposes the perversion of a normal blastema existing under normal relations, and is in accordance with the law of analogous formations; it is then an *epigenesis.* But their appearance, quite isolated from these tissues, and in parts which sustain no relation, embryologically or otherwise, with cartilage, does not admit of so easy a solution, and its consideration demands our attention for a few moments. We have already seen how great is the disproportion in number between even *all* the *alleged* cases of this last, and those in which there is a natural connection with allied tissues; and this is made still greater by the omission of those in which the evidence of their peculiar nature was based upon their gross appearance only. So that, if it *ever* does really occur, it must be considered as the rarest exception.

All the most careful studies made, and all the most thorough knowledge acquired, concerning the primitive relations of animal tissues, invariably point to one law, which, in virtue of its very nature, can have no exceptions. This is, that a tissue having been evolved, there has necessarily been the previous existence of its germ or blastema, from which alone it could have taken its origin. In the development of the ovum out of an homogeneous material, the allocation of the different tissues depends upon the type-power which it inherits from the parent, and which constitutes the first expression of its individuality as a separate being. After its evolution in this manner, the persistence in each tissue of its own special type-power is the reason why any loss sustained is made up by the appearance of a similar tissue in its place, and elaborated from one common nutritive fluid, the blood. And, did this not exist, we might well expect that glandular, or any other tissue would be found as the material of repair in fractured bones, instead of that which is, or is to be, identical with the part taken away or with those to be united.

It would, therefore, appear that our best views of histology, based upon the most careful experience, all go to show that, a set of tissues having been formed and existing under *normal* relations, their subsequent increase and reproduction must occur according to the law of analogous formations, and as the result of their special type-power. This at once settles in the negative the question whether, in normal structures, there can occur spontaneously one tissue in another of a very different nature. In morbid tissues we naturally look for the same results; for, as yet, there is no evidence that the laws regulating *abnormal*, are different from those of *normal*, products.

If in a glandular organ, such as the mammary gland, testicle, &c., there can be *created* a new blastema, and which is different from that of the tissue in which it is developed, this fact at once introduces a new feature into our knowledge, not only of the relations which tissues sustain to each other, but also to the individual which they compose. In fact, I may say that it is about equivalent to the admission of the doctrine of *spontaneous generation*. And although, according to our best views in physiology, there should be a distinction drawn between the real significance of these two facts should they occur—viz., 1st, of the *creation* of an entozoon in the living tissues; and, 2d, of the *creation* of a cartilaginous tissue in the midst of others to which it is in no way allied; and this should be so because the entozoon has an individuality of its own, while the cartilage has not—yet they have some points of analogy, and I can readily see how the admission of the latter as a scientific truth would shake our belief in the *impossibility* of the former.

And, finally, I may say that I am satisfied that, in considerations of this kind concerning the fundamental relations of tissues, the *teleological* must always be taken instead of the *physical view* of the subject; for experience has shown that it is not only the surest guide with doubtful points, but is constantly enabling us to recognize and correctly appreciate natural phenomena.

From these remarks, it will be seen that I am inclined to a disbelief in the occurrence of true enchondromata in the glandular and other soft tissues, isolated originally from those of either bone or cartilage. This same would, of course, be true as to true osseous tumours in the same localities—for true osseous tissue is always preceded by that of cartilage.*

* I know that it is usually written that bone is formed in either *cartilage* or *membrane* —an opinion of about a hundred years old, based upon the appearances seen in the formation of the tabular bones of the cranium. But, as this matter is important in this connection, it may be well to state how it stands. Since then, and within twenty years, the investigations of E. H. Weber (Hildebrandt's *Handbuch der Anatomie, &c.*, tom. i. p. 333) and Miescher (*De Inflammatione Ossium, &c. &c.*, Berlin, 1836, p. 15) go very far to show the constant pre-existence of cartilage, and are the more important because made upon these cranial bones. Within a recent period, however, Dr. Sharpey (*Human Anatomy*, by Jones Quain, edited by R. Quain and Wm. Sharpey, Amer. edit., by Dr. Leidy, vol. i. p. 83), after microscopical examinations, advocates the old opinion. My own view is that, in all cases of true bone having Haversian canals and Purkinjean corpuscles, it is formed *in cartilage*.

We know very well that the most thorough studies of the origin and nature of epithelial morbid growths show that they *always* have a primitive connection with the normal tissue of this kind; in fact, are always *epigeneses*, although, in some instances, the conditions of the surrounding tissues are so changed that these earlier relations cannot be traced, and the product seems so isolated from any part to which it is histologically allied; and, even now, there are pathologists of note who maintain that often these growths are entirely new formations from the beginning.—(*Rokitansky* and *Cruveilhier.*) In these facts may be found a solution of some of the difficulties with which we meet in the subject under consideration.

We will now turn to the review of some of these cases as they have been recorded; but, at the same time, I will remark that my own experience with fibro-plastic and cartilaginous tumours has shown me that the opinion of any man, however eminent he may be in the practical duties of surgery, *cannot* be relied on, when based simply on the gross aspects of the product; for, in many instances, there are no leading external features by which the distinction of quite different growths can be made.

Those cases, in which growths alleged to be cartilaginous have been found about the tunics of the testicle, must be regarded doubtful, since this view of their nature is based upon mere external aspect; at least, it is true of all the cases I have met with in medical works since the times of Sir Astley Cooper, and even before. I have never seen and examined examples of this kind, but the very description given by Cooper* renders the matter doubtful. He says they are smooth, like cartilage, externally; but, internally, are cretaceous, which makes it very probable that they are fibro-plastic tumours, taking their origin from the fibrous tissue of one of the tunics (in fact, they are sometimes thus attached),† and subsequently having in their centre a deposit of cretaceous matter, which, it is well known, is not rare in similar growths in other localities.

For the same reasons, I cannot admit, as *veritable* cases of enchondroma, those few that have been recorded of alleged cartilaginous tumours found in the peritoneal cavity, or attached to the peritoneum.‡ And I have every reason to believe, from my own examinations, that they are of a fibrous nature. The same is also true of those attached to the serous membranes of the chest; and here I will add that, not a great while since, a small tumour was found after death attached to the pleura, and which, both from its feel and external and internal aspects, could not, I am convinced, be judged otherwise, was regarded as a true cartilaginous formation; yet the microscope showed it to be simply *fibro-plastic*, the fibrous tissue having a somewhat reticulated

* Observations on the Structure and Diseases of the Testis, Amer. edit., Phil., Lea & Blanchard, 1845, p. 217.

† See a case reported by Mr. Douglass, Lond. Med. Gaz., vol. xxvi. p. 509.

‡ One of the best-marked cases of this kind is the one reported by Mr. Hawkins, Lond. Med. Gaz., 1840, p. 447.

arrangement. Had it not been microscopically examined, it would have been preserved in spirits as a real enchondroma of the pleura.

Although it may appear singular to some, yet I do not hesitate to place the somewhat noted case of Sir Astley Cooper in the same category. A large tumour was found in the mammary gland, but there appears to be no evidence that it was of a cartilaginous nature, except its external and internal aspects; and it certainly is to be regretted that the proof of its nature was allowed to rest upon this evidence alone.

The parotid gland is a favourite locality of these alleged enchondromatous growths; but in nearly all the recorded cases there is no positive evidence of their definite character. From a careful perusal of those in which true cartilage structure was found by the microscope,* I am inclined to the opinion that their primitive blastema was derived from the contiguous osseous tissue, although all these earlier relations had been changed by the subsequent progress of the disease.

There are also a few cases in which the testicle appears to have been the seat of this disease.

So far as I am aware,† however, those recorded by Müller are the only ones of which sufficient examination was made to remove all doubt. Concerning these, I cannot offer any opinion, because the details of their history are not sufficient so to do. But I will say of those that are to occur in the future, that it belongs to observers to carefully study their existing relations in reference to this point; for, in scientific pursuits of this kind, it is well known that an opinion is valuable just in proportion to the number of the relations that were taken into consideration when the observations on which it is based were made.

The importance of this point, which is now daily recognized in zoological studies, belongs equally to pathology. One may observe a phenomenon very carefully and thoroughly, but, as regards a certain point in it, he is not qualified to pass a scientific opinion unless, *at the time*, his attention was especially directed to it. The interpretation of nature is difficult, even under the most favourable circumstances; and science can never rest on a solid basis if dependent upon such careless observations. Aside from the bearing it may have upon cases previously alluded to, this point is well illustrated by what has been recorded of the so-called cartilaginous formations on the surface of the spleen, throughout works on pathological anatomy. To the observer it appears like cartilage, and he calls it thus, without thinking of any of those important histological relations which such a view would imply. And here on this point I may observe that, in several cases in which I have had the good fortune to meet with this product, a careful microscopical examination revealed *no* carti-

* I refer particularly to the case of Müller (loc. cit. p. 124), and to the case of Prof. J. H. Bennett (On Cancer and Cancroid Growths, Obser. xxxix.).

† Mr. Gamjee's pamphlet, "On a Case of Ossifying Enchondroma in the Testis of a Horse," quoted by Mr. Paget (Lectures on Tumours), Lond. Med. Gaz., Aug. 1851, I have not seen.

laginous structure, although it could not have been judged otherwise from external aspects. The same is also true of apparent cartilaginous deposits on the surface of *other* serous membranes, so far as my own observation goes; they are *fibro-plastic structures.*

From this brief review of the recorded cases of enchondron of the soft parts, as bearing upon its fundamental histological relations, it will be seen that I am quite disinclined to adopt the view that it can thus *spontaneously* occur; and I shall be much surprised if future experience does not substantiate the above opinion. At the same time it must be remembered that, as we have already learned some of the highest physiological truths, as expressed in an erratic form in pathological processes; so we must not shut our eyes to the phenomena of the latter, even when what have been considered established laws of the former are at stake; and, I may add, the best lessons of pathology in this connection have yet to be learned. There is, however, one point that should never be forgotten: it is that, when isolated facts concerning morbid processes come in direct contact with physiological laws, based upon the phenomena of normal organic life, these facts cannot be too carefully observed, or too strictly recorded. The occurrence of enchondroma, as a simple epigenesis, or connected with the normal cartilaginous and osseous tissues of the body, is, as before observed, much more frequent than the alleged other form we have just been discussing. It then has no more points of interest than belong to any epigenesis; the variations of different cases being, for the most part, referable to size, shape, and locality.* The cartilages and bones of the extremities appear to be its favourite localities, and especially the bones of the hand; in fact, in more than half of all the cases it belongs to this locality. We cannot hazard even a conjecture as to the intimate causes of its appearance, when it occurs without external injury; there is good reason, however, to believe that these causes are, for the most part, of local nature; yet there is some evidence, from a few cases, that the relations it sometimes sustains to the system may be *general,* or even *hereditary.*†

* Since the work of Müller, who enumerated all the veritable cases up to his time, the following is a reference to some of the cases about the nature of which little doubt can exist, from the evidence of locality, &c., although in many of them no microscopic or other analysis was made:—

Gluge. Anat. Physiol. Untersuch. sur Pathol., Minden et Jena, 1838–41, vol. ii. pp. 153–7 and 187–9.

Cruveilhier. Anat. Pathol. du Corps Humain, Paris, 1842, livr. 34, pl. 4 and 5.

Frogley. Med.-Chir. Trans., 1843, vol. xxvi. p. 133.

Goodsir. Lond. and Edin. Month. Journ., Feb. 1843, p. 171.

Hertz. De Enchondromate. Erlangen, 1843; quoted by Vogel.

Adams. London Lancet, 1847, vol. ii. p. 463.

Bennett, On Cancer and Cancroid Growths. Edinb. 1849; Obser. xlviii. and ix.

Fergusson. London Lancet, 1850, vol. i. p. 455.

Lloyd. London Lancet, Dec. 1850.

Kingdon. London Med. Gaz., Sept. 5, 1851.

† See Ancell, Med.-Chir. Trans., vol. xxv. art. xv. Also Cobbald, Edin. Month. Journ., Aug. 1851.

As would be expected, it is most likely to occur in young persons; for, being an off-shoot of the type-power of the tissue, it would be most apt to take place when this power was in its greatest activity.

The appearances found on microscopical examination are considerably uniform as to primary constituents; although these are considerably altered, oftentimes, by changes that may subsequently supervene. These appearances belong almost entirely to those of normal fibro-cartilage; differing, however, from it, in this respect, that in the diseased product the cartilage corpuscles seem grouped, many of them in a single areola; while, in the normal tissue, they are more scattered, each areola containing generally one or two only. In comparatively few cases, true cellular cartilage is met with; and then is quite like that found in the embryo, or in cartilaginous fishes.

The amount of fibrous tissue found is very variable, sometimes in such excess as almost to exclude the real cartilage element, and then, again, quite small in quantity. This is a fact of considerable importance, since it shows that in many cases there could be no way to distinguish them from fibrous tumours, except by the apprehension of the cartilage corpuscles by the microscope. But while, on the one hand, they may be confounded with fibrous growths, on the other they are undoubtedly, in many cases, regarded as truly carcinomatous; and a study by the microscope of the changes they may experience as to their elements, shows clearly how this mistake is made. They undergo what is called a degeneration, terminating in softening and partial liquefaction. In these instances the fibrous tissue forming the areolæ, is broken up, and the cartilage cells become loose and isolated, and, from a retrograde metamorphosis of their tissue, oleo-albuminous particles appear in their interior, so as almost to entirely obscure their original appearance.* When these changes have occurred, the tumour has a softened, pulpy feel and aspect, and quite resembles some forms of carcinoma; and this not only externally, but so much so structurally, that the microscopist need have great care to avoid error. On these accounts, those who have experience in these matters cannot be too careful in pronouncing their opinion, where all opportunities for analysis are not afforded.

The *ossification* of enchondroma may occur in two ways: the one, by an extension of that part of the bone on which it rests into it; the other, by this process occurring, as it usually does, centrally, and from the cartilage itself.

Vogel† says that true enchondromata do not ossify; but he says this because he thinks there exist two distinct forms of cartilaginous tumour, viz.: *cartilaginous exostosis* and *enchondroma*. This may be really true; but I think, in most cases, it will be difficult to make the distinction good, because all enchondromata, it appears to me, are only *epigeneses*.

* See the case of Lebert, Physiol. Pathologique, Paris, 1845, tom. ii. p. 213. Also a case by Bennett, on Cancer and Cancroid Growths, Edinb., 1849, Obser. xxxviii.

† The Pathological Anatomy of the Human Body. Translated by Dr. Day, London, 1849, p. 212.

Sometimes centres of ossification will be found in quite small tumours; while, in other cases, in those that are enormously large, no trace of bone-tissue can be found; so that we seem as yet entirely unacquainted with those primitive conditions on which this process in these morbid products depends. It is well known that all pathological tissues, whether of an homomorphous or an heteromorphous nature, are really *infra-formations;* that is, they never in any case reach the standard of the normal product; and if epigenetic, however much they may resemble the tissue from which they spring, they are certainly different in the fact of wanting that definite end and aim which belong to all true tissues. On this account, we should not look for the formation of true bone in the majority of cases of enchondroma. And I believe it is true that it is met with in comparatively few instances. In some instances, you have the passage of a few of the cartilage corpuscles into the caudate, or spiked corpuscles of bone; and, at some points, these may be sufficiently numerous to form osseous spicula; but I think it rare that you have in these products a series of processes, so closely resembling those of the normal tissue, that *true bone*, with concentric lamellæ, Haversian canals, and Purkinjean corpuscles, is the result. In some specimens, I have noticed that there appeared a disposition of the cartilage corpuscles to arrange themselves in linear series; in fact, I think this will be found true of all those that have been of long standing.

As examples of this disease in connection with the hand, I select the two following cases, which, in other respects, have many points of difference:—

Case I.—E. L., æt. 13, entered the Massachusetts General Hospital June 27th, 1850. Reported then that three years previous she fell, striking right hand upon the ground, and forcibly bending back the ring finger. Soon after there appeared, in present locality, a small tumour of the size of a pea, not tender or attended with pain. The increase to present size has since been gradual and without symptoms of any kind. At time of entrance there was a firm unyielding tumour, two-thirds of an inch in diameter, just behind the metacarpo-phalangeal joint of the ring finger, and seemingly connected with the metacarpal bone; not tender, and not impeding motion of finger.

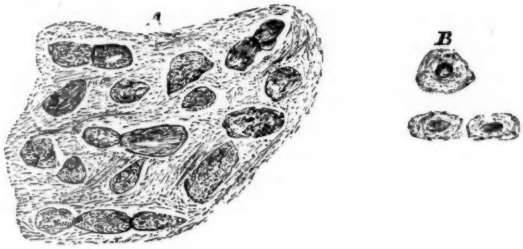
It was removed by Dr. S. D. Townsend, and was found to have an attachment, as had previously appeared, with the extremity of the bone.

Incised.—The surface had a semi-translucent, sago-like aspect, a little spongy but still rather firm to the feel. No appearance of osseous matter.

Under the microscope, the tissue appeared composed of irregular-shaped, and rather solid-looking, corpuscles; varying in size from $\frac{1}{2000}$th to $\frac{1}{300}$th of an inch in diameter, the lighter ones having a granular aspect, and all were nucleated, and some with two or three nuclei. Acetic acid affected them quickly, rendering them more transparent and the nucleus more prominent.

These corpuscles, exactly like those of cartilage, were situated in a semi-

transparent gelatiniform matrix, having but little fibrous tissue or scarce any areolar arrangement.



Microscopical Appearances of the Enchondroma of Case I.

A. Cartilage corpuscles in their granular stroma.
B. Appearance of corpuscles after being treated with acetic acid; the nucleus appearing boldly.

In this case, the epigenesis was due to an injury received from without, and approached in character quite closely that of true cellular cartilage; and the fibrous element being almost entirely absent, it is easy to perceive how subsequently, after central softening, it would have closely resembled, both grossly and microscopically, encephaloid cancer.

Case II.—M. M., æt. 13, entered the Massachusetts General Hospital, May, 1850. Reported then that general health had always been good. Eleven years before, and being only two years of age, the tumour of the middle finger commenced without known cause. Some time afterwards, but does not know exactly how long, the tumour on the forefinger appeared. Both of these have increased uniformly to present size, without any inconvenience except from bulk. At time of entrance there was a smooth, round, elastic tumour about one inch in diameter, situated on the outside of the first, and part of the second phalanges of middle finger, crowding it outward and directly across the ring finger, at nearly a right angle. The integuments covering it were smooth, with enlarged veins ramifying over it.

Appearance of Hand of Case II. before operation. One-fifth natural size.

On the inside of middle phalanx of forefinger was another tumour of similar character, but only one-third of its size. There was a third quite small, at middle joint of ring finger, but concealed by that of the last. None of these were tender on pressure.

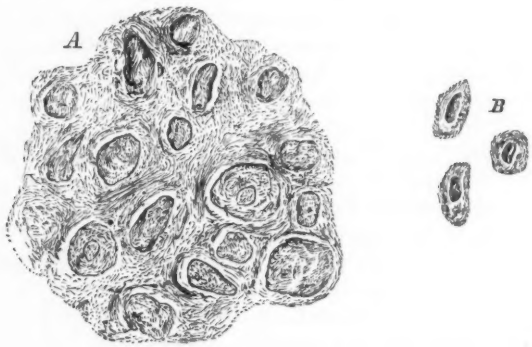
The middle finger was removed by Dr. J. Mason Warren. It was found

that the shaft of the metacarpal bone had almost entirely disappeared, but the upper extremity remained.

Incised.—The surface of the tumour presented an homogeneous aspect, semi-translucent, grayish white, and not unlike that of a fresh section of an English turnip. It had a spongy feel, and was easily scraped away.

Under the microscope, the structure was found to be almost wholly cellular, consisting of cells of an oblong and oval shape, prominent, and with a well-marked granular aspect. In some places there appeared a tendency to an arrangement in a longitudinal series. In other parts they existed as doublets or triplets, looking like a very long oblong cell divided into two or three parts. By acetic acid the whole was somewhat cleared up, and a distinct nucleus or nuclei in each was apparent.

These corpuscles were situated in a very delicate and almost transparent *nidal stroma*, with scarce a trace of true fibrous tissue. Some of these cells, in the very centre of the tumour, had passed on to the formation of the spiked osseous corpuscles.



Microscopical Appearances of Enchondroma of Case II.

A. Cartilage corpuscles, single, in doublets, and in triplets, lying in their five granular stroma.
B. The same corpuscles treated with acetic acid, revealing prominently the nucleus.

In this case, its manifold appearance did not belong, apparently, to any external violence, but it is to be referred to *constitutional* causes.

Boston, *Nov.*, 1851.

ART. VII.—*Surgical Cases—Extraction of Foreign Bodies.* By JNO. FRED. MAY, M. D., Prof. Surgery in the National Medical College, and one of the Surgeons to the Washington Infirmary.

CASE I.—*Large Calculus—Lithotomy—Bilateral Operation with the Double Lithotome of Dupuytren.*—George H., aged 18, entered the Washington Infirmary for stone in the bladder. He has for many years been labouring under all the symptoms of stone, but has never been sounded for it. He is unable to pass his urine except by placing himself horizontally across a chair. On sounding him, a few days after his entrance, a calculus was at once detected, and, from several subsequent examinations, I believed the stone to be so large that I did not deem his case a favourable one for lithotrity. I therefore decided to cut him, and, on the 15th of April, performed the bilateral section before the medical class in the following way:—

The patient having been etherized and placed in the usual position, a deeply-grooved staff was introduced into the bladder and pressed firmly against the perineum, as near as possible in the median line. A crescentic incision was then made over the staff, which, commencing on the right side at a point equidistant from the anus and the tuberosity of the ischium, was terminated at a similar point on the opposite side, the centre of the curve being near three-fourths of an inch above the anus. The incision was, by a few strokes of the scalpel, deepened, the fascia and perineal muscles divided, and the membranous portion of the urethra exposed, which was then opened upon the groove of the staff longitudinally, and to a sufficient degree to admit the beak of the double lithotome of Dupuytren, which, being fairly placed in the groove, was introduced upon it into the bladder. The stone being felt with the end of the lithotome, the staff was extracted, and the instrument being reversed, the blades were sprung to No. 18 on the graduated scale, and it was withdrawn from the bladder, thus dividing the prostate equally, on both sides nine lines.

The calculus was then readily seized with the forceps, but, finding that from its size it would not pass through the incision that had been made in the prostate, the forceps were extracted, the lithotome again introduced, and the gland further divided by the blades being sprung to their maximum point of twenty-one lines. The stone was then seized with curved forceps, and extracted entire with not more than the usual force required in the extraction of a calculus of medium size by the lateral operation.

The following were its dimensions: Longest diameter, *two inches within a fraction;* shortest diameter, *one and five-eighths of an inch;* circumference, *five and five-eighths inches.* It was hard, being a triple phosphate, and round. The patient recovered from the operation in about the usual time, and, being sufficiently strong to travel, left for his home in Virginia in about two months after the operation was performed.

I have given the details of this operation, because I think it tends to sustain the superiority of the bilateral section for the extraction of large calculi; for I am convinced that the stone in this case could not have been extracted by the lateral operation without prolonging the incision further beyond the limits of the prostate and upon the neck of the bladder than would have been safe for

the patient. For a stone less in size, I have seen the high operation resorted to in the wards of Civiale.

Within the last twelve years, the bilateral section for the stone has attracted a good deal of attention from American surgeons, and I believe some of the most distinguished, after having fairly tested it, are its advocates at the present time. Its great merit, which I have already alluded to, that it permits the extraction of large calculi with greater facility and with less danger than any other method of perineal lithotomy, I think few can doubt when they consider attentively the anatomy and dimensions of the parts which are concerned in the operation for the stone.

I believe it is generally admitted, at the present day, that one of the great points of safety in perineal lithotomy is the avoidance of injury to the middle perineal fascia, or that layer which is reflected from the prostate gland upon the rectum, and hence that it is most desirable not to incise beyond the limits of the gland. The division of this fascia beyond the gland unquestionably favours urinary extravasation, and, consequently, its frequent attendant of sloughing abscesses between the bladder and rectum. Scarpa, indeed, was so thoroughly convinced of the importance of not injuring the prostatic fascia, that he thought the limits of the gland ought never to be passed with the knife, and that a calculus of more than sixteen lines ought never to be extracted by the perineum entire. It is true that others, disregarding the gland, have advised the free incision of the neck of the bladder when necessary; but, although this free incision may be necessary in the lateral operation, if the calculus is large, I presume that even its advocates will hardly contend that it is equally safe. No one, I think, can do so who properly appreciates the value of fascial expansions in warding off and thus protecting parts which lie beyond them from the well-known effects of extravasated fluids and secretions. Velpeau, in his remarks on lithotomy in his great work on operative surgery, supervised by Prof. Mott, in alluding to this point, observes:—

"Delpêch also thinks that there is less danger in dilating, or even lacerating, the neck of the bladder than in incising it extensively, and that in this respect Lecat's rule ought to be retained as a law. There is under this precept an important truth, which could not be perfectly appreciated until in these latter times, because the anatomical fact connected with it had not been clearly indicated. It is this: *That lithotomy, confined within the limits of the prostate, is infinitely less dangerous than in that in which the incisions are extended beyond this gland.*"

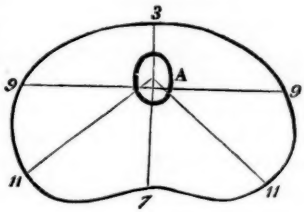
If it is, then, true that it is all-important, for the reasons that have been mentioned, not to incise beyond the borders of the prostate gland, the superiority and safety of the bilateral section is apparent.

The following diagram of the several diameters of the prostate, from the urethra as the starting-point, will at once show the difference in the extent of the incisions through the gland made in the lateral and bilateral methods.

The measurement is that of M. Senn, of Geneva, and gives the average size of the gland in a healthy state in the adult. In old men and children

there is, of course, a considerable variation from it. The anterior face of the gland is considered.

It will thus be seen that, from the urethra A to the periphery of the gland, the dimensions are as follows: Transverse diameter nine lines; oblique diameter ten to eleven lines; inferior vertical diameter seven lines; superior vertical diameter three lines. The oblique diameter, the greatest, is the one divided in the lateral operation. This is eleven lines, or one line less than an inch. Add to this the dimensions of the urethra, about four lines,



and this section will give us but fifteen lines. Now, it is very certain that a calculus of over sixteen lines in its shortest diameter could scarcely be extracted through this opening without either tearing or incising beyond the limits of the gland, for, although something must be allowed for the stretching and yielding of the parts, yet this is fully counterbalanced by the increased volume which the blades of the forceps would add in grasping the stone. The surgeon, therefore, is obliged either to tear the parts by main force, or to incise them freely beyond the prostate.

Now, in the bilateral division of the gland in which both the oblique diameters are incised, we have, allowing four lines for the urethra, a section of twenty-six lines; and if to this we allow for the stretching of the curve, approaching as it does towards a straight line during the passage of the calculus, it is evident that it will permit, without great difficulty, the passage of a stone of two inches in its short diameter, leaving, at the same time, intact the parts beyond the gland. None of the methods of perineal lithotomy can, therefore, in its *free* and *safe* incision, be compared with the bilateral operation, permitting, as it does, the passage of a calculus of two inches in diameter and six inches in circumference without causing any laceration.

In speaking of this operation, Velpeau remarks that "a calculus of twenty to twenty-four lines in thickness, and from five to six inches in circumference might, *strictly* speaking, pass through the opening without causing any laceration." If the stone be larger than this, it had better either be broken, if possible, through the wound, or extracted by the high operation. There are surgeons who prefer performing the bilateral section with a common scalpel, for the purpose of simplifying the operation, and from the belief also that the incision through the gland does not correspond to the expansion given to the blades of the lithotome, from the yielding of the latter on account of their length and slenderness. I do not think the last objection to be correct. If the instrument is made properly, and the blades are well and firmly articulated and sharp, I have not been able to discover any such defect. The operation can, no doubt, be very well performed with the com-

mon scalpel or bistoury, and if the lithotome of Dupuytren did not possess positive advantages over it, it ought to be preferred upon the ground of being the more simple instrument. But the lithotome, as Velpeau remarks, renders the parts more tense as it divides them, gives greater regularity to the wound, terminates the operation with a single cut, and especially makes "an actual curved, instead of a simple V incision, which latter is the only one which can reasonably be expected, if we use the bistoury or other lithotomes." It is an instrument, moreover, that can be safely used at all ages, as the blades can be sprung by the graduated scale on the handle from four to ten and a half lines on each side. I first used the double lithotome in 1842, and then on a child of three and a half years. The blades were set to four lines each, thus making an incision of eight lines through the prostate, and through this, with a pair of ordinary polypus forceps, I extracted a calculus one inch in its long, and five-eighths of an inch in its short diameter (about as large as a common-sized almond in the shell) without the wound being even stretched by its passage. The child did not lose over ℥i of blood, and the recovery was very rapid, the wound being nearly closed in two weeks after the operation was performed; a fact which goes far to disprove the assertion made by some, that cicatrization is much slower after the bilateral than the lateral section.

There are, moreover, other reasons, besides those already mentioned, which, it appears to me, render this operation safer in many respects than the lateral method, and which I, therefore, think should cause it to be adopted, not only specially, for the removal of large calculi, but also as a general method.

In the first place, there are fewer vessels divided by it, and the bulb of the urethra is not touched, for the incision is made between the anus and the bulb, and the latter with its transverse artery can be always avoided. In the lateral operation, from the position and extent of the incision, I do not see how the bulb and artery can well escape, notwithstanding the directions in the books. Without attaching to their division great importance, it is yet undoubtedly preferable to avoid them when it can be done. If the double lithotome is used, the pudic artery cannot by any possibility, except anomalous distribution, be reached. Even the superficial artery, when in its usual position, is not usually divided; so that the operator is incomparably less incommoded by hemorrhage, as the posterior branches of the transverse, and the anterior twigs of the hemorrhoidal artery are really the only arteries that are usually divided. Again, as the lithotome cuts *outwards* and backwards, there is less danger to the rectum. Indeed, I do not see how the intestine can be injured, unless it should be greatly distended from neglect, prior to the operation; and, lastly, the ejaculatory ducts and vesiculæ seminales are not exposed to risk, for it will be recollected that the membranous portion of the urethra is first opened, and then the blades of the lithotome are sprung. Their obliquity *outwards*, from this point, is such that the ducts cannot be injured,

while, the blades not passing the limits of the prostate, the vesiculæ cannot be reached.

Case II.—*Lithotomy—a Metallic Penholder embedded in an enormous Stone in the Bladder.*—A few days previous to the operation just mentioned, I was requested by a physician in a neighbouring town to visit a young girl, of fourteen years of age, whom he feared had a calculus in the bladder. The suspicion of the existence of a calculus was very recent (but a few days before my visit), for although her health had been declining for more than a year, and her sufferings had been very great, she had studiously endeavoured to conceal from her friends her condition as long as it was in her power. I found her in a state of extreme emaciation, anemic, and with a pulse constantly ranging to one hundred and twenty and upwards. She had a very frequent desire to evacuate the bladder, attended with great spasmodic suffering. The discharge from the bladder was of a most offensive nature, and seemed to be an admixture of urine, blood, and pus, the latter of which appeared to predominate over the natural secretion. She was unable to get any sleep at night, except by the influence of opiates most freely administered.

On examining the bladder with a female catheter, I found that the instrument would penetrate only to a very short distance, as it came in contact with a calculus as soon as it passed through the urethra, and, on introducing my finger into the vagina, I found the entire fundus of the bladder was filled by the stone. It appeared, in fact, to occupy the whole bladder, which was contracted closely around it.

Although her case seemed to be almost hopeless, nothing could be done but to remove the cause of her great suffering. I accordingly incised the urethra on each side, and to a sufficient degree to enable me to pass into the bladder a pair of strong crushing forceps, with which I hoped to be able to break down the stone. Upon introducing my finger, after incising the urethra, and in the endeavour to insert it between the stone and the side of the bladder, I felt a substance with a sharp edge projecting from it. She had, some time previous to the operation, stated that she had *swallowed* a brass penholder, and that it was in her bladder. This object I could now distinctly feel, embedded in the centre of a calculus, which filled the bladder so closely that it was with much difficulty I could pass my finger between it and the walls of the viscus. The metallic holder was fixed in a transverse position. After several efforts, I succeeded in bringing one of its ends towards the opening in the urethra. And then, after much difficulty, with stout polypus forceps, in loosening and finally extracting it from the stone. It was of brass, and a little more than three inches in length, and about a quarter of an inch thick.

The stone appeared to be broken into several fragments by the extraction of the brass tube from it, which also was completely flattened anteriorly, where it was grasped by the forceps. The fragments were even still further crushed, and a large portion of them removed from the bladder; and an opiate was then administered. She continued to pass, for the two succeeding days, further portions of the calculus in small pieces, and in powder; and, for several days, her condition seemed to be improving, but the discharge of pus from the bladder still continued; and, though her suffering was much less, she gradually declined, and died in about two weeks after the operation from the extensive disorganization and ulceration which the bladder had undergone.

I very much regret that I could not obtain permission to examine the dis-

eased organ. The stone, as well as I could judge by the examination which I made of it in the bladder, filled up the organ so closely that its function as a receptacle for the urine was entirely destroyed, the fluid merely trickling over it from the ureters, and then dribbling off by the urethra. Whether she had introduced the penholder before the existence of the calculus, and it had then become the nucleus for its formation, or whether it had been used by her to relieve herself in urinating while the calculus was small, and it had then accidentally slipped into the bladder, is a point upon which I am ignorant.

Case III.—*Laryngotomy—Foreign Body in the Larynx—Its Removal the day after the Operation.*—On the 20th of May, I was desired to see a child five years of age, in Georgetown, for the purpose of extracting a grain of coffee, supposed to have entered the wind-pipe. On the 14th, while running about the room, he was suddenly attacked with a very severe fit of spasmodic cough, and he at once told his father that he had *swallowed* the coffee, which, a few minutes before, had been seen in his mouth. The cough, I was told, was soon followed by difficult respiration, which at times, though very distressing, was succeeded by such intervals of calm and quiet breathing, and moderation in the urgency of all the symptoms, that the physicians who had previously seen the child thought that the foreign substance might have been expelled in the efforts of coughing; at the period of my visit, however, six days after the accident, the symptoms had so increased in severity that it was very evident to all the little patient could not long survive unless he obtained speedy relief. The dyspnœa was extreme, the mother being obliged to hold him up constantly in her lap to assuage it, and he had scarcely slept at all for forty-eight hours.

Throughout the lungs and trachea there was a strong mucous rhonchus, the lips and neck were livid, and there was continually a frothy discharge from the mouth. The superior lobes of the lungs, at every inspiration, projected much above the clavicle. The external jugular veins were greatly distended, and the inferior extremities were cold up to the knees, although they had been repeatedly placed in hot mustard baths.

It was, in fact, plain that effusion must soon take place; I therefore lost no time in opening the larynx.

An incision was commenced near the os hyoides and extended downwards about an inch and a half. The sterno-hyoid and thyroid muscles were separated, and the hemorrhage, which, from the congestion of the parts, was freer than I anticipated, was arrested by compression with a sponge for a few minutes.

The crico-thyroid ligament and the cricoid cartilage were then divided, and the incision was also carried slightly upwards into the thyroid, making in all an opening of about half an inch. As soon as this was done, a large quantity of yellow mucus was ejected through it by a sudden attack of the cough. It was so considerable, and it so much resembled pus at the first glance, that one of the gentlemen present thought an abscess had been opened. This, however, soon ceased, and the little patient was breathing through the wound as quietly as possible; the lips became red, and in a few minutes after the operation he fell asleep upon the table, the most perfect relief being afforded by the opening in the larynx. The foreign body could not, however, be discovered; but the moment the wound was closed with the fingers, the difficult respiration and the cough instantly returned as violent as before. I was satisfied that it was either lodged in one of the laryngeal pouches or about the rima glottidis.

A probe curved, and wrapped with a soft piece of linen, was repeatedly passed to the upper part of the larynx with the hope of detaching the foreign body, but without success; and, finding that considerable irritation was produced by such efforts, I determined to leave the wound open until the next morning, in the hope that it might be expelled in the interval.* At my visit the next day, I found the child perfectly comfortable and surrounded with his playthings. He had slept quietly all night, and was still breathing calmly through the wound; but, on closing the opening with the finger, the dyspnœa and cough, in all their violence, instantly returned.

On my return home the previous evening, I prepared a small whalebone probang, the sponge of which was calculated to fit the larynx rather closely, and thus to force anything it might encounter past the epiglottis. This I now introduced through the wound and forced it upwards until, by looking in the mouth, I saw it pass the epiglottis. This was again repeated, and the instrument extracted. I now found I could close the wound perfectly without any recurrence of the cough or the least embarrassment in the respiration. I therefore brought the edges of it closely together by means of a single suture and adhesive plaster, and the little patient continued to breath calmly by the natural passage. Two leeches were directed to be placed on each side of the larynx; and being perfectly satisfied that the obstacle had been dislodged by the probang, and had fallen back into the pharynx and had been swallowed, I ordered a tablespoonful of castor oil to be given, and requested that the evacuations produced by it should be carefully examined.

This opinion proved to be correct, for the grain of coffee was found entire in the first discharge caused by the purgative. The wound granulated and cicatrized kindly, notwithstanding the manipulations to which it had been exposed; and the child was soon about and well, with the exception of a hoarseness and roughness in the voice, which continued several weeks and then gradually subsided.

When foreign bodies are lodged in the larynx, above the opening which has been made for their removal, it is recommended that curved forceps and bent probes or scoops should be introduced for the purpose of seizing and extracting them. When the substance is large and easily felt, these instruments no doubt may be used with advantage; but if it is small and fixed between the vocal cords, or partially in the rima glottidis, or in the laryngeal pouches, I should think this mode of proceeding must be generally difficult and uncertain. I found it impossible to succeed in this way, and after several trials, and the only result being an increase of irritation, I desisted and used the probang the next day, as already stated. I do not recollect to have seen any account of a foreign body having been removed in the same way from the larynx, though I should think a like proceeding would naturally suggest itself to the surgeon under similar circumstances.

Case IV.—*Tracheotomy—Foreign Body in the Trachea.*—Mr. S., of Montgomery County, Maryland, requested me to visit his child at his resi-

* M. Velpeau (New Elements of Operative Surgery, article Bronchotomy) observes. "It is remarked in this and all other cases, that the upper parts of the air tube about the glottis may be freely explored without causing any irritation, whereas it is the reverse in the direction towards the bronchi." In this case, the introduction of the probe upwards caused very decided irritation.

dence, about twenty miles from Washington, for the purpose of removing a grain of corn which it was believed had fallen into the trachea.

On arriving at his house, I found the little patient (about five years of age) breathing with great difficulty, and distressed every few minutes with violent fits of spasmodic cough very much like croup. He had been playing with several grains of corn in the mouth the preceding evening about sundown, when he was suddenly seized with the cough. This had continued through the night, accompanied with difficult respiration, which had gradually increased to a degree that was truly distressing to witness when I saw him. Different efforts had been made by the physician in attendance with emetics, and by placing the head downwards, to expel the foreign body which, from his appearance and symptoms, I was at once satisfied had fallen into the windpipe; and from their urgency I decided on opening it without delay. An incision about one inch and a half in length was made over the trachea, which, commencing a little above the cricoid cartilage, was extended downwards in the median line nearly to the sternum. The neck was very fat and short, the little patient having frequently been attacked with croup, and the trachea was consequently at a greater depth than usual from the surface; and I may here remark that I have found the operation of tracheotomy, though simple in the adult, to be attended with much more difficulty in a young child of much *embonpoint.*

There was considerable hemorrhage as the incision was deepened, and I found it necessary to tie an arterial branch which poured out blood quite freely; and then, by holding a small piece of sponge for a few moments in the wound, the oozing, which was principally venous, was soon completely arrested. The trachea was found to be very tender, and the child evinced much suffering whenever it was touched with the finger. The foreign substance could now be distinctly heard and felt to strike against it, and with considerable force, at every expiration. The point at which this occurred was uniformly the same, and just below the cricoid cartilage, and I therefore decided to make the opening at that point instead of dividing the crico-thyroid membrane. Upon cutting three or four rings of the trachea, the corn could be plainly seen to approach the opening at every expiration, descending alternately during inspiration, thus playing continually up and down. I several times attempted to seize it with the forceps as it flew upwards, and also to dislodge it by dilating the wound; but, failing in this, a curved probe was introduced, with which it was suddenly caught and detained in its ascent until extracted.

The relief was instantaneous, and, after taking a few swallows of water, the little patient fell into a sound sleep. The edges of the wound were brought together with two fine sutures and a strip of adhesive plaster. Union by the first intention followed, and in a week he was as well as usual.

Case V.—*Large Foreign Bodies in the Knee-Joint—Removal by Opening the Articulation.*—Tabler, aged 51, entered the Washington Infirmary in October, 1845. The left knee-joint is very much enlarged, the capsule being greatly distended by the synovial fluid, and two very large movable bodies can easily be detected floating in it. These bodies, on examination, appear to be very hard, and they can be made to pass and repass from one side of the joint to the other by slight pressure. The motions of the articulation are almost entirely suspended. He can flex it very slightly, but the effort to do this is attended with considerable pain.

The patient says that he accidentally opened the joint thirty-five years since with a hatchet, near the upper and outer side of the patella, and that a por-

tion of the synovial fluid escaped through the wound. He also injured the joint, at twenty years of age, in jumping over a snow-bank, and was unable the next day to move it without occasioning great pain from one of the foreign bodies getting under the knee-pan. It was at this period that he discovered for the first time that there was something loose in the joint. There seemed then to be but one, and that about the size of a grain f corn. Ever since, the joint has been subject at different periods to become very much distended and painful from accumulation of the synovia. This was generally the result of some injury or fatigue of the joint, for, when kept quiet, the swelling and pain would disappear.

Since February last, he thinks the bodies have increased considerably in size.

He was made aware of the risk in opening the articulation to the extent that would be necessary to extract substances so large as these evidently were; but he manifested a perfect willingness to submit to an operation, as the functions of the limb were rendered entirely useless by the foreign growths in the joint, and the suffering produced by them at times, as has been stated, very acute.

Previous to their removal, he was kept on low diet and in bed for a week, with the limb perfectly still. Leeches and cold fomentations were applied to the joint, and his bowels were well evacuated. Having taken these precautions, they were removed in the following way: Both were first brought to the inner side of the articulation, and held there by the fingers of the left hand being placed above them. The integuments were then drawn forcibly upwards by an assistant, and an incision one inch and a half long was made down to the capsule, the opening into which was made rather less than the external one. The largest substance was instantly slipped through it, and was followed by the smaller one, not more than a teaspoonful of the synovial fluid escaping with them. The upward traction of the integuments being removed as soon as the bodies passed out, the correspondence, or parallelism, between its wound and that of the capsule was, of course, destroyed, and the further escape of the fluid and the entrance of the air was thus guarded against. The wound was closely covered with adhesive plaster, and a compress soaked in cold water was placed around the joint. The limb was put in splints, the cold applications continued, and low diet still enjoined. Not the slightest pain or unpleasant symptoms followed the operation, and the wound united throughout by the first intention. The patient was allowed to use the limb gently at the end of a couple of weeks. He soon after returned to his home in Virginia, and gradually recovered the entire use of the joint.

The measurement and weight of the two bodies, made by my colleague, Prof. Miller, was as follows:—

The largest—length *two inches;* breadth *one inch and one-eighth;* thickness nearly *three-fourths of an inch;* weight 301 *grains.* The smallest—length *one inch and a half;* breadth *seven-eighths of an inch;* weight 175 *grains.*

They were very hard, being of osseous consistence. In shape, oval, convex on one side, and flat on the other. The surfaces of each presented a rough and irregular appearance, traversed by a number of smooth sulci or depressions.

They are still in my cabinet, and are the largest bodies that I have ever seen extracted from an articulating cavity.

On sawing through them longitudinally, the interior was found to be as white and almost as hard as ivory. In the largest there were a number of cells lined by a delicate epithelium. The cellular structure of the other was

not so distinct, the cells being very fine. A laminated appearance also was evident in each.

Case VI.—*Foreign Body in the Knee-Joint—Removal by Opening the Articulation.*—In August, ——, I was consulted by Dr. E., of this city, upon the propriety of removing from the knee-joint a foreign body that was detached and movable, and that occasioned him great inconvenience, and, at times, much pain.

In walking, the loose substance would often and suddenly slip between the heads of the bones or under the patella, producing great pain, and completely arresting locomotion for the time.

It could be detected, upon close examination, perfectly loose and floating about in the synovial fluid, which was but slightly increased in quantity.

I advised its removal; and after confining him to bed with the limb immovable for about a week, the joint was opened and the foreign body removed in the same way as in Case V. The same precautions were also observed after the operation, and the wound united by the first intention without any unpleasant symptom, and the function of the joint was, in a short time after, as perfect as ever.

In this case the formation was cartilaginous, and had every appearance of a portion of cartilage that had been detached from the articulating surface of one of the bones, being smooth and polished on one side, and rough as if by recent separation, and having osseous particles still adhering to it, on the other. It was rather less than an inch in length and a little over half an inch in breadth.

The process by which foreign bodies are formed in the articulations is a very disputed point, and has produced a great diversity of opinion. Their existence I believe is generally preceded by some violence or injury done to the joint; and it is, I think, most probable that they are not always formed in the same way, from the great difference that exists in their appearance and composition when examined. Laennec thinks that they are formed on the outer surface of the synovial membrane and, after a time, find their way into the cavity of the articulation; the synovial membrane yielding and forming an attachment or stem by which they are at first stationary, but that being subsequently detached by the motions of the part, they are found loose and floating in the synovia. Theden believes them to be, originally, glands of the joint detached by violence. John Hunter, that they are formed from a nucleus of extravasated blood which, in course of time, becomes organized. Reimarus that they are pieces of cartilage broken off. This also is the opinion of Monro. Bichât thinks that they are caused by an alteration of a part of the synovial membrane into cartilage. Whilst Schreger believes them to be concretions,—

"The result of plastic matter deposited on the exterior, and either a new formation, which increases, according to the laws of elective attraction, from the unnaturally mixed synovia; or as incrustations, to which their lamellar structure upon a section through them leads, of which sometimes *coagula* of lymph, sometimes parts of the natural apparatus of the joint, form the base. Here also belong those bodies which, previously connected by a stem, have been detached, as after that the organic vegetation ceases, and their increase is subjected to the laws of general attraction, so that they are built up of homogeneous matter from the surrounding fluids of the joints."

This last view seems to me the most rational in regard to those bodies which are laminated and hard, as in Case V. Originating in all probability from a coagulum of lymph or blood, or having for a nucleus a portion of the cartilage of the joint, that may have been detached by violence, they go on gradually increasing and hardening from the successive layers of plastic matter deposited on their surface by the albumen or salts of the synovial fluid, as a vesical calculus is formed by the successive deposit of its concentric laminæ from the urine.

In Case VI. the appearance of the foreign body too plainly indicated it to be a portion of cartilage detached from some part of the articulating surface to admit of a doubt.

Washington, *October 30th*, 1851.

Art. VIII.—*The Typhus Fever, as it prevailed at the Baltimore Almshouse during the Winter of* 1850–51, *with Clinical Observations.* By James Wynne, M. D.

The identity of, or difference between, typhoid and typhus fever has occupied a large share of the attention of medical men for a number of years; yet, although much has been written, and many facts have been collected, for the purpose of elucidating the subject, it still remains a disputed and debatable question, in which a large share of talent is arrayed upon either side. It is not my purpose to enter into this discussion upon mere theoretical grounds, but to offer some facts connected with the appearance of typhus fever, as it prevailed at the Baltimore Almshouse during the last winter, as a feeble mite contributed to the solution of the inquiry. I have been induced to contribute this small offering more freely, because it appears to me that the only mode of determining the question is by the accurate account of a number of carefully observed epidemics, in which the characteristics of the disease during life, and the appearances presented after death, are observed with judgment and noted with precision.

A febrile affection, presenting a certain set of phenomena and organic lesions, prevails in the British islands, and is accurately described by English writers under the appellation of typhus fever. A febrile affection, presenting another set of phenomena and organic lesions, exists on the Continent of Europe, and is likewise described with great precision by Continental writers, and more especially by those of France, under the name of Dothinenteritis, or typhoid fever. These diseases, presenting characteristic differences in their respective localities, assimilate, in some respects, so nearly to each other as to lead to the belief that they are one and the same disease, and only present the different peculiarities, noticed by English and Continental writers, under the influence of locality, climate, temperature, and other concomitant circumstances.

The typhoid fever, as described by the French writers, is not an uncommon disease in the United States, more especially in the large cities; and the identity of the affection, as it occurs in Paris and New York, cannot be questioned. The typhus fever presenting the pathognomonic symptoms of the English writers, on the contrary, is rarely met with as an endemic disease, although it occasionally occurs.

The differences between typhoid and typhus fever have been so often pointed out by abler pathologists, and more acute and attentive observers than myself, that the details necessary to introduce them to the reader would here be a work of supererogation. I would, on this point, simply remark that, as we meet with the two diseases in this country, typhoid fever is insidious and stealthy in its attack; typhus, on the contrary, is speedy and violent. Typhoid fever is usually accompanied by diarrhœa, while in typhus this symptom is generally not present. In typhoid fever an eruption occurs, late in the disease, and consists of pink spots, which disappear on pressure. The eruption of typhus fever occurs on the fourth day upon the breast or abdomen, and gradually extends itself over the trunk, limbs, and head. It is of a dark-red colour, is elevated above the surface, and does not disappear on pressure. The duration of typhoid fever is from fourteen to eighty days; that of typhus from nine to sixteen days. Post-mortem examination in typhoid reveals invariably an ulceration or inflammation of the glands of Peyer; in typhus, they are found intact. Typhoid fever usually originates from unknown causes, and is not contagious. Typhus fever is developed in the midst of filth, and is contagious.

Typhoid fever prevails in this country as an endemic disease; typhus fever was recently introduced from the British islands, in the emigrant ships which bore the famished peasants of Ireland from their native land to America—from the midst of famine to comparative plenty. Upon the arrival of the first ships containing these poor creatures, it was supposed that the meagerness or unhealthy quality of the food given to them on the passage had produced the dreadful mortality prevalent amongst them, otherwise it could not be explained how persons leaving port in apparent health should so soon become the victims of fever; and the sympathy which had been excited by the tale of their woes at home, ripened into indignation at their apparently harsh treatment on ship-board. It soon, however, became evident, either that the disease was brought on board with emigrants, or was generated in the foul atmosphere of the steerage, in which hundreds of persons of the filthiest habits were crowded together for whole weeks upon their passage across the Atlantic. Measures were therefore taken to remove them from their ships, and place them in hospitals on shore for treatment.

In this manner the disease was introduced into this country, and has afforded our medical men an opportunity, which they would gladly have dispensed with, of studying its peculiarities, not only in the persons of the emigrants themselves, but in those who have nobly fallen victims to its contagion.

On the 26th day of September, 1850, the ship *Scotia* arrived at Baltimore with two hundred and thirty Irish emigrants on board. There was no typhus fever during the passage; but, on the 10th of October, Henry Lanahan, with his wife and child, all of whom had been passengers in the *Scotia*, were admitted into the Baltimore Almshouse, with mild symptoms of this disease. Lanahan was placed in the male hospital, and Mrs. Lanahan and her child in the female hospital. They all recovered, and Mr. Lanahan was discharged from the hospital and sent to the men's dormitory to sleep, on the first of November.

The men's dormitory consists of two garret rooms, each about fifty feet in length by thirty in width, with low ceilings, and aired by two windows on each side. They are warmed by large coal stoves. Fifty-two men slept in each of these rooms.

On the 19th of November, James Lally, who had slept in the men's dormitory for a considerable length of time, was admitted into the men's hospital with symptoms of typhus fever.

From this date until the last day of the following February, there were admitted into the hospital, for treatment, with typhus fever, 46

Of whom recovered,	30	
Died,	16	
	—	46
Of these were admitted from the dormitory,		22
" " cells,		4
Nurses attacked,		8
From Cumberland,		12

Of those admitted from the dormitory, 8 died; 14 recovered.
" " cells, 0 " 4 "
Nurses attacked, 6 " 2 "
From Cumberland, 2 " 10 "

Case I.—The true nature of Lally's disease was not suspected upon his admission into the hospital, and no care was, therefore, taken to separate him from patients labouring under other diseases. This man was an idiot, and about sixty years of age. He was naturally deaf and stupid, and now appeared to be in a partially comatose condition. He could not understand or answer intelligibly the questions put to him, and hence nothing could be learned of his symptoms except such as could be gleaned by external observations. His pulse was 80 and hard, his respiration laborious, pupils fixed, look vacant and expressive of great cerebral derangement.

November 23.—A mulberry-coloured eruption appeared on his body, and diffused itself over his extremities. This eruption varied in size from a flax-seed to that of a half-dime, and was most distinct upon the abdomen and hips. The spots were maculated, and but partially disappeared on pressure. The skin hot and burning to the touch, tongue dry and fissured with a dark-brown line in the centre; sordes upon the teeth and gums; pulse 86; muttering delirium; subsultus; fetid effluvia from the body, and involuntary discharges of urine and feces.

These symptoms continued to increase in gravity. Bronchorrhœa super-

vened upon the 26th, and the patient died on the 28th, and the ninth day of his admission.

Autopsy sixteen hours after death.

External Appearance.—Anteriorly, the eruption, although faded, was still visible. The posterior portions of the body, head, neck, and extremities, were of a dark mottled colour, owing to the gravitation of the blood to the most depending parts, which had commenced two days before death. The muscles were soft and flabby.

Brain.—Veins engorged; sinuses filled with dark uncoagulated blood; serous effusion, with thin plaques of lymph between the pia mater and arachnoid membrane; cortical substance of the anterior portions of the brain pale; its whole substance slightly softened, but more particularly its posterior portion; the cerebellum engorged and softened.

Thorax.—Mucous membrane of the larynx tumid and filled with a frothy mucus; lungs engorged with dark fluid blood, increasing in proportion to their most depending parts, discharging upon section a coloured serum, mingled with air and mucus; parenchyma easily torn and friable, especially where most engorged. *Heart.*—Cavities containing thin fluid blood; substance flabby.

Abdomen.—Stomach inflamed, thickened, and softened; mucous coat covered with a dirty-whitish liquid. *Small Intestines.*—Mucous coat softened, and small patches removed; muscular coats softened, and the whole containing a thick dirty-looking mucus; isolated follicles; and Peyer's glands of natural size and appearance; ascending, transverse, and descending colon and rectum distended with air and fecal matter, inflamed and softened.

Viscera.—Liver of a dark, livid-purple colour, enlarged from engorgements, and softened. *Spleen* twice the normal size; colour of stewed prunes, and soft as jelly. Pancreas, kidneys, and bladder all softened in their texture.

The symptoms in this case were, from the beginning, very grave, and little hope of recovery was entertained. The difficulty of interrogating the patient and ascertaining his condition by any other than physical appearances, tended to increase the complexity of the case. The fetor exhaled from the surface, and the sinking of all the vital forces from the commencement, presaged from the beginning the result. An attempt was made to rouse these forces by the administration of diffusible stimulants and beef-tea, but it proved ineffectual, and failed to produce an impression from the first. The lesions presented after death might readily have been anticipated. The dark dissolved blood permeating all the tissues, and collecting in greatest abundance in the most depending parts, not only of the internal organs, but likewise of the external muscles of the head, neck, and back; the softened and spongy condition of all the internal organs; and the decomposition of the body, which seemed to have commenced before life was extinct, all showed the powerful depressing influence exerted on the nervous centres, and the slight capacity of resistance to repel the morbific agent under which the patient succumbed.

Case II.—George Spencer, aged sixty, tall and spare, and with a constitution much impaired by intemperance, was admitted into the hospital on the 2d of December. He had slept in the men's dormitory, and had not felt well for two weeks. Three days before had lost his appetite, and had eaten nothing; was thirsty, slept but little, complained of general *malaise*, pain in the head and limbs. On his admission, had cephalalgia, pain in the back

and legs, great debility, and some nausea; vomited in the morning; pulse 80; skin hot and dry, and imparting a peculiar burning sensation to the touch; eyes injected and watery; countenance dull and heavy; tongue dry, dark brown in the middle, with red edges; abdomen retracted; bowels torpid; and slight eruption upon the abdomen and hips.

December 5.—The maculated eruption had covered the whole body; pulse 84; increased cephalalgia; tinnitus aurium; intelligence dull; appeared more feeble, sensitive to touch, thirsty, deglutition good, and odour from the body and breath offensive.

11.—Symptoms had increased in gravity; pulse irregular, tongue foul and parched, extreme prostration, delirium, subsultus, involuntary discharges, bronchorrhœa, and death on the 9th day of admission into the hospital, and the 13th of his disease.

Autopsy twelve hours after death.

External appearances.—Body somewhat emaciated; maculated spots still visible, intermixed with darker ones of a purple colour; back, neck, and legs mottled with dark livid blotches.

Brain.—Veins and sinuses contained dark fluid blood. Arteries of dura mater containing fluid blood, pia mater injected, cortical substance pale, and the base of the brain charged with fluid blood.

Thorax.—Bronchia and larynx injected, and of a dark livid colour, and containing a dark mucus. Heart and lungs of natural appearance, but softened in texture.

Abdomen.—Stomach somewhat distended, mucous membrane softened and thickened; small intestines contained some dark greenish fluid, mucous coat natural; Peyer's glands of usual size, colour healthy; liver larger than usual and softened; spleen and kidneys softened; an effusion of dark fluid blood between the transversales and external, internal oblique and rectus abdominis muscles of the right side.

Case III.—Jacob Reeder, aged sixty-two, was the carriage-driver for the Institution, and slept in the men's dormitory. He awoke on the morning of December 13th with headache, loss of appetite, nausea, general uneasiness, and debility. He complained of feeling cold, and remained by the fire all day. On the 14th and 15th had headache, anorexia and other symptoms continued; but, fearing that he would be sent to the typhus-fever hospital, he forced himself to move about. On the 16th he remained all day in the dormitory, and was there visited by Dr. Van Bibber, who ordered him to be sent to the hospital.

December 17.—The skin was hot, dry, and burning to the touch; countenance dull; conjunctiva injected; pulse 84; limbs exceedingly tremulous; abdomen retracted and dotted with a dark coloured eruption; epigastrium tender to touch; bowels constipated; headache and anorexia increased; great mental apathy and incoherence in reply to questions; tongue covered with a white fur.

18.—Eruption copious, and the gravity of all the symptoms detailed on the day previous increased.

19.—Much worse; offensive odour from breath and body; subsultus; delirium; pulse 96; respiration and position indicative of extreme adynamia; abdomen tympanitic, and involuntary discharges of urine and feces. These symptoms continued to increase in intensity until the 22d, when he died in a state of coma, on the 5th day of his entrance into the hospital, and the 9th of the disease.

Autopsy twenty-four hours after death.

External appearance.—The eruption anteriorly faded; the posterior portion of the body and limbs presented a bruised purple appearance from the engorgement of fluid blood.

Brain.—Vessels engorged with dark fluid blood, plaques of sub-arachnoid lymph upon the sides of the hemisphere substances, of normal consistence, anteriorly pale in colour, and posteriorly darker than usual.

Thorax.—Bronchia and larynx slightly injected and covered with mucus; lungs exhibiting the results of pneumonia, with red hepatization in the centre of the right lung—both engorged with thin blood and mucus, which exuded plentifully upon incision, and softened in substance. *Heart* softened and flabby, left cavity contained dark fluid blood, aortic valves thickened from former disease.

Abdomen.—Stomach exhibiting in places punctiform injections, mucous membrane softened. In the small and large intestines the mucous membrane was thickened, red, and softened. Four large ulcers were situated immediately above and around the cœcum, and two below it. The whole intestinal canal presented evidences of chronic enteritis.

Liver.—Of a slate-gray colour and softened. Spleen twice the natural size, pultaceous and of a slate-gray colour likewise: whether from a previous attack of remittent fever, not known.—Pancreas, kidneys, and bladder softened, and the whole appearance of the abdominal cavity anomalous.

In the cases above detailed, the British practitioner will recognize at a glance the disease which prevails in all the confined, ill-ventilated, and unhealthy spots in the British Islands, under the name of Typhus fever, and fills the fever hospitals of the large towns with inmates. The Continental medical man, on the contrary, will look in vain for those symptoms during life, and lesions after death, which he is familiar with under the name of Typhoid fever. It is to him a new disease; as indeed it is to the medical men of this country, who reside out of the large cities, and have not an opportunity of contrasting the one with which they are familiar with that which accompanies the poor emigrants on their passage to this country.

Autopsies were made of all of the patients who died of this disease, sixteen in number, but the appearances presented were so similar, that the above cases give a fair portraiture of the whole, and the insertion of more in detail would be useless prolixity; the purpose in view being to present such facts, connected with the existence of the disease as it prevailed here, as to enable medical men to compare it with the disease as it prevails in others places. In order that this may be accomplished the more readily, I will offer a few considerations applicable to the cases as a whole, and which will give the reader an opportunity of ascertaining by what collateral circumstances they were affected.

Origin of the disease.—Typhus fever did not prevail at the Almshouse before Thomas Lanahan was admitted. While he was kept in the comparatively well-aired hospital, the disease did not spread; but no sooner was he placed in a small and confined room, crowded to repletion, to sleep, than the disease extended to other inmates of the apartment. One after another, twenty-two of the occupants of this crowded dormitory were attacked by the disease and admitted into the hospital.

After the death of Lally, a separate hospital was fitted up over the coloured people's hospital, for the reception of typhus fever patients, by which means those labouring under this disease were separated from those under treatment for other affections. This hospital, which was far from commodious, soon became crowded, and the nurses who had, with considerable reason, great dread of the contagiousness of the disease, kept it in a condition eminently unfavourable to the successful treatment of the fever patients. *All of the nurses who performed duty at various times in this hospital, during the prevalence of the fever, eight in number, were attacked by it, and six died.*

A large number of emigrants found employment on the Baltimore and Ohio Railroad, west of Cumberland, and from this source, at a later period in the disease, twelve fever cases were admitted into the Almshouse. Several of these were placed in the part of the house denominated the cells, which consists of a row of apartments on the basement or ground floor, communicating with a passage in common, to sleep, before their disease was recognized. From these cells two more patients were admitted into the hospital, so that *every one of the thirty-four cases originating in the house were exposed to the influence of direct contagion.* These cells were kept in the most uncleanly condition; and, in passing from patient to patient, I was so completely overcome by the offensive effluvia as to feel faint and giddy. I called the attention of Dr. Van Bibber, the house physician, to this condition of things, and expressed the fear that the cells would furnish their quota of patients. He did what was in his power to remedy the evil, but in the division of duties but little was effectually accomplished. The female department of the house was kept in a far more cleanly condition than the male, and it is worthy of notice that but a single case of the disease occurred on that side. Dr. Miltenberger, the accomplished lecturer on Pathological Anatomy in the University of Maryland, and the physician to the female department, who saw but few of the cases while living, but spent much time in prosecuting the dissections of those who had died of the disease, was attacked by the fever. He is of the impression that he derived the poison of the fever from the dead, and not from the living. Dr. Van Bibber, although occupied constantly with the fever patients, singularly escaped, as did his assistant, Dr. Graves.

Exanthematous eruption.—In all the cases whith occurred at the Almshouse, a distinct and specific exanthematous eruption was present.

I had for a long time considered this as an important pathognomonic symptom in this disease, and could not fail to remark the different estimate affixed to this exanthem, by English and continental writers, admitting the diseases to be identical; nor had I been able to discover the peculiar discolorations, mentioned by English writers, in the cases of typhoid fever which had fallen under my own observation at home. I therefore requested Dr. Van Bibber to take particular notice of this symptom, and record its appearance or absence with great care. He warmly entered into my views in this respect, as did the young medical men at the Almshouse, and I can, therefore, speak with confidence as to the result.

This eruption consisted of small spots, sometimes distinct and at others confluent, of a dark-red colour, commencing on the breast or abdomen and extending to the extremities; usually not elevated above the surrounding surface, and if so, but slightly, and never approaching to pustules; disappearing but slightly under pressure. It ordinarily appeared on the fourth day of the disease, and subsided slowly, at a variable period, between the fourteenth and twentieth day. The young students soon acquired the faculty of recognizing it, and looked for it with much interest. It differed very widely from the scanty pink eruption of typhoid fever, and would not be more likely to be confounded with it than the eruption of measles with that of scarlet fever. In short, I do not hesitate to say, that if the disease, as it prevails elsewhere, is marked by the same peculiar eruption as that which characterized it at the Baltimore Almshouse, it must be looked upon as an important pathognomonic symptom, clearly defining its position as an exanthematous disease, and as distinctly separating it from typhoid fever, as the eruption of rubeola separates that disease from scarlatina.

General observations.—This disease appeared to be an acute affection, ushered in by chills, uneasiness of the limbs, wandering pains, dizziness, loss of appetite, headache, drowsiness, excessive sensibility to pressure, and extreme prostration. It was, in fact, clearly adynamic in its character, and required stimulation from the beginning. The persons who were attacked were men of impaired constitutions, broken down by previous excesses and the evils incident to poverty. These persons were crowded together, in large numbers, in small, ill-ventilated apartments, where they were surrounded by an atmosphere highly charged with poisonous effluviæ, and consequently in a condition highly favourable to the reception of the disease. There were many who added to these powerful causes the depressing influence of fear, and to this latter cause may be attributed the attack of all the hospital nurses, and the extreme gravity of their cases. The hospital attendants were selected from the pauper inmates of the establishment, it being a rule neither to employ additional nurses, nor to give compensation for these services. They invariably entered upon this duty with fear and trembling, and frequently expostulated with the keeper of the almshouse, for dooming them to what they believed to be certain death. It is not singular that, with decayed constitutions, bad habits, and a prey to the despondency of so powerful a passion as fear, they should have imbibed the poison of the disease, and have perished under its influences.

It was early discovered that *the disease could not be checked in limine*, but terminated with a great deal of regularity, when death did not intervene, by a crisis. The treatment, therefore, was mainly directed to this end, and an attempt was always made to sustain the system during the regular and certain progress of the disease through its various stages.

Cleanliness, that most important adjunct in the treatment, it was impossible to obtain, and the main dependence was placed in support by stimulants, accompanied by such other medications as the peculiarity of the cases seemed

to require. The patients were placed upon a diet of beef tea, chicken soup, and strong coffee, given in such quantities as they could bear. Spts. nit. dulc., spts. minderi., aqua camph., and wine, were at first administered, and in proportion as the gravity of the symptoms increased, porter, brandy, quinine and musk were added, and frequently given in large quantities. In the case of Reeder, six grs. musk and ten grs. quinine were at last given every two hours, with wine whey, brandy and water, and beef tea, alternately as much as he could bear. In forming an estimate of this treatment, the shattered constitutions of the subjects of the disease must be taken into consideration.

Appearances presented after death.—In the *post-mortem* examinations which were made, great care was taken to ascertain the organic lesions said to constitute the characteristic differences between typhoid and typhus fevers. These examinations were conducted with great deliberation, and were carefully inspected by Professor Miltenberger, whose accurate anatomical knowledge was of great assistance in their prosecution. His acuteness in detecting organic lesions, enables me to speak confidently on this point, as I am quite well assured that nothing of material importance bearing upon the question at issue escaped observation. The whole abdominal contents, and the glands of Peyer, and isolated follicles in particular, were most minutely inspected, and in none of the cases were they found in the condition in which they are discovered after death from typhoid fever.

To Dr. Van Bibber, under whose immediate inspection most of the cases came, and in whose professional skill I repose the highest confidence, as well as to his attentive assistant, Dr. Graves, I am indebted for the careful observations made by them, from day to day, of many of the important facts contained in this paper.

It is proper to state, that the opportunities of Drs. Van Bibber and Miltenberger to examine cases of typhus fever have been considerable. They were unremitting in their attendance on typhus fever patients at the Baltimore Infirmary during the year 1847, when the disease was first introduced in numbers in the city among the destitute sufferers from famine in Ireland, and conjointly prosecuted most of the dissections of the fatal cases that occurred in the house at that period. They saw typhoid and typhus fever at the same time, examined their analogies and discrepancies, and finally followed them into the dead room, and noted the organic lesions presented by each, as they lay side by side, and have since met many cases in the public institutions in this city. The cases at the Infirmary in 1847 were not seen by myself, and I can therefore only speak of them through information derived from others. This statement is presented in order to show what reliance is to be placed in the facts above narrated, and which I offer with the hope that others may be stimulated to record their observations, fully assured that nothing can finally put this nice and highly important question at rest, except a careful accumulation of facts noted with accuracy and detailed without prejudice.

ART. IX.—*Medical and Obstetrical Cases.* By J. YOUNG, M. D., of Chester, Pennsylvania.

To DOCTOR HAYS: In your Journal, I frequently see reported cases of poisoning with laudanum. In all such accidents, I think it the duty of every one who has had experience in their treatment to state the result. With this view, I send you the two following cases:—

CASE I. *Excessive Narcotism.*—On the 10th of August, 1835, I was sent for in haste, to see a little child in its second summer. I found it narcotized almost to death; the countenance was perfectly pale and blanched, and all power of muscular contraction entirely suspended; to use an every-day popular expression, it was "limber as a rag;" it could not be aroused to consciousness by any possible means; it could not swallow fluids when put into the mouth.

The mother informed me that it had had "summer complaint," that she had been accustomed to use "Baker's specific" with her children under similar circumstances; that her bottle had been all used, but that a deposit on the inside was adhering to the glass, and she thought she would wash that off, and give it till she could procure some more. She did so; the child soon went to sleep; this was about one o'clock P. M. It slept so much longer and sounder than usual, that about six o'clock she undertook to arouse it, but found it impossible. The poison had been in the stomach something like *six hours* when I saw it. What was to be done? The stomach-pump, if I had had one there, would have been of no avail at that late period; nor would emetics, if they could have been swallowed, which they could not have been; stimulants of any kind could not have been got into the stomach, and stimulating injections I did not think of. A number of neighbours, hearing of it, had collected before I arrived, and all believed the child must die, and I saw not an encouraging symptom to forbid the idea. The poor mother was crying and wringing her hands, because she had poisoned her babe, and was calling on me to save it if possible. After reflecting for some minutes, without knowing what to do, I called for a bucketful of the coldest spring or pump water they could get, and a pitcher; they were soon brought. I got one of the females to hold the child, in such a position that I could pour the water over its head, without wetting its clothes. I poured, in a small continuous stream, perhaps a gallon, on the crown of its head, when it began to show some signs of muscular contraction; I continued it a little longer, when it roused up, cried lustily, and kicked and plunged about, so that we desisted. I now gave some other directions concerning it; read a lecture to the mother on the use of the nostrum she had employed, and left the case. It recovered without any further difficulty. This case made a great noise at the time, and banished that quack article from our neighbourhood.

I had never before, nor have I ever since, seen cold water thus recommended in these cases; and yet without it I think this child must have died.

CASE II. *Poisoning by Laudanum.*—Some seven years ago, I was called at dusk, to a young negro girl, aged eighteen. On arriving I found her in very much the same condition that I found the subject of Case I., unconscious to all external impressions, and the muscular system relaxed. On inquiry, I learned that she had for some time past been trifling with

laudanum, taking it in increasing doses till she could bear a teaspoonful three or four times a day, and boasted about its making her so "merry and so strong." On this occasion, which was on Saturday, at noon, she went to the store and procured *two ounces*, saying to some of her friends, "she intended to have a right happy afternoon." She drank about one-third of it, about one o'clock; in an hour she drank another third, and not feeling "any better, but feeling dull and sleepy," she drank the remainder. Her black friends, knowing her former use of it, and ignorant of what was a dangerous dose, paid no attention to her; she became giddy, laid down, talked incoherently, which they attributed to folly on her part; nor did they know then, how much she had taken. Between seven and eight o'clock in the evening, I saw her as before stated. It was useless to think of trying anything but the means I had used in the former case; accordingly, we had an empty tub and a bucket of cold water procured at once; her head was held over the tub by an assistant, with the face down; I commenced pouring on the cold water as before, and in less than five minutes she was completely restored. She then told us of the quantity she had drunk; told some one where the bottle could be found; it was a two-ounce vial, entirely empty; she said it was full, and she drank it all at the three draughts, as before stated. I directed nothing further, but castor oil to open the bowels; to keep her awake a few hours; but if she became stupid and comatose as she had been, to use the water again as they had just seen me do. I subsequently learned this last was not necessary, and that she got well in a day or two. Believing this to be an important means by which life may be saved in some extreme cases where laudanum has been taken in an excessive dose, I send this statement to you that others may try the measure. I have, in twenty-nine years practice, never met with but these two cases of poisoning by opium, and certainly I could not have treated them more successfully by any other means; in fact, all other means were shut out, and the patients must have died, but for the resort to the measures adopted.

[*Remarks by the Editor.*—The value of cold affusion, in cases of Narcotism, appears not to be so generally known as it ought to be, and a few remarks on the subject may therefore be useful by attracting attention to the subject, and as confirmatory of the observations of our esteemed correspondent.

The treatment of poisoning with opium, by dashing cold water over the head, is said by Christison (*Treatise on Poisons*) to have been first proposed in 1767, by a German physician, Dr. Gräter (*Diss. Inaug. de Venenis in genera:* Argentorati, 1767).

In the *London Medical Repository*, vol. xviii. (p. 26, July 1822), Septimus Wray, Esq., relates three cases of poisoning by opium successfully treated by cold affusion; and in the journal just quoted (p. 49), Dr. James Copland records another case of the same kind, in which that remedy was used with an equally favourable result.

Cold affusion has been since successfully employed in narcotism from opium, in many instances. Among these we may refer to the cases recorded by Dr. John Crampton (*Trans. of the Ass. of the Fellows and Licent. of the King's and Queen's Coll. of Phys. in Ireland*, vol. iv. p. 300, Dublin, 1826); Professor Samuel Jackson (*Philadelphia Journal of the Medical and Phys. Sciences*, vol. viii. p. 150, Philad., 1824); Dr. J. C. Richardson, (Journal last quoted, p. 398); Dr. B. P. Staats, of Albany (*New York Medical and Phys. Journ.* vol. iii. p. 473, N. Y., 1824); Dr. J. B. Beck (same Journal, p. 473); J. C. Cross (*Transylvania*

Journ. Med., Nov. 1828, p. 453); and more recently by Dr. Bright (*Reports of Medical Cases*, vol. ii. p. 203).

In one of the cases mentioned by Dr. Bright, from the experience of Mr. Walne, complete recovery was accomplished, mainly by cold affusion on the head, where there appeared reason to believe that more than an ounce and a half of laudanum had disappeared from the stomach before evacuating remedies were used.

Dr. Christison says, "dashing cold water over the head may perhaps be dangerous in the advanced stage, when the body is cold and the breathing imperceptible; but the most desperate remedies may be then tried, as the patient is generally in almost a hopeless state."

Dr. T. S. G. Boisragon, of Cheltenham, suggests (*London Medical Gazette*, March 6, 1840, p. 878) the alternate use of cold and warm water, at different parts of the surface of the body. This, Dr. Christison considers an improvement. "The alternating impression of heat and cold may," he says, "act better as a stimulant than either agent singly; and the occasional employment of heat prevents the risk of collapse from too continuous exposure to cold." Dr. Boisragon saved, in this way, two cases, one a child, the other an adult, in very unpromising circumstances.

Dr. Cross (*Essay on Poisoning by Opium in Transylvania Journ. of Med.*, Nov. 1828) remarks: "Entertaining as I do, the most exalted opinion of its [cold water] efficacy, I shall be pardoned when I assert that of all the remedies enumerated, it is the only one that deserves confidence; the only one that can be viewed in the light of a certain, I had almost said, infallible antidote to poisoning by opium." Dr. Cross has collected and given an abstract of all the cases in which the measure in question has been successfully employed up to the time at which he wrote. He also relates three cases of narcotism, treated successfully by himself by this means, and narrates a series of experiments made by him on dogs, illustrative of the same point.

Although we are not prepared to go as far as Dr. Cross, in regarding cold water as "an infallible antidote to poisoning by opium," we think the evidence we have adduced, with that furnished by our valued correspondent Dr. Young, is sufficient to demonstrate the value of that means of treatment, that after proper means have been employed to remove the poison from the stomach, it should be regarded as among the most efficient means of arousing the sensibility.]

The following cases, of a different character, may not be deemed uninteresting:—

Case III.—*Uterine Hemorrhage during Pregnancy and Labour.*—The subject of this case was a fine, healthy, respectable woman, of small size, but well-formed pelvis, who had been confined five times previously, in all of which I attended her. Her labours were always hard, on account of large children, but perfectly safe. She had engaged me to attend her in her sixth confinement, from the 1st to the 10th of June, 1849. On the night of April 9th I was called to her, on account of a sudden *gush* of blood from the vagina, without the least pain. It had ceased entirely before I got there; she was much agitated and alarmed; I ordered nothing but quiet, and cold clothes to the vulva. I stayed till morning, when she was as well as usual; had slept well; there was no discharge; she was somewhat nervous from fright and loss of blood. I enjoined rest for a few days; and forbade her coming down stairs for a week or two, and left her with a request to be sent for if she wished me again. In a short time she was down stairs, attending

to household affairs. On Friday evening, April 27th, I was again sent for, for the same cause as before. On my arrival, I found the flooding had subsided, except a slight stillicidium. I gave a few powders of acet. plumbi, with laudanum, applied cold cloths, enjoined quiet and composure. She was not so much prostrated this time as before, because, probably, she was not so much alarmed, nor was blood lost quite to the same amount. There was not, on this occasion, the least pain, or sensation of pressing down. After taking two powders the stillicidium ceased, and she slept till morning. I again enjoined her keeping her room till I gave consent for her to leave it. On Monday, 30th, I saw her husband; he said she was very well, sitting up in her room, &c. I heard no more from her till Monday, 7th May, in the evening, when I was again sent for. There had been the same sudden gush as formerly, without the least sensation of pain; a little stillicidium again remained, which a few grains of acet. plumbi and laudanum, with cold cloths, soon checked. In the morning she was exceedingly weak and prostrate, and I remained with her. She took some coffee and toast for breakfast. An hour or two after, there was another gush of blood without pain, that prostrated her still further. I examined and found the placenta directly over the os uteri, with the fœtus so high up that I could not reach it with my finger. I now had Drs. Gregg and Porter called to my aid. We agreed to give ergot, to bring on uterine action, and deliver. It was given, but produced no effect. She was prostrate and weak, without any pain or uneasiness whatever, and without the least discharge; nor did it return afterwards. We felt satisfied now that the placenta was entirely detached, that there could be no further hemorrhage, and concluded to watch her attentively, and at the first indication of uterine contraction to deliver; but this did not manifest itself till the next Friday, except to a very slight extent on Wednesday, when we gave ergot, with the effect, not of increasing, but of relieving it entirely. On Friday, the pains manifested themselves, and in a few pains we delivered her of a dead child. From Monday till Friday, some one or two of us were constantly with her, and endeavoured by every means to restore her lost strength, to enable her to sustain what she yet had to go through. On Thursday afternoon and night, and Friday morning, she appeared to be recruiting finely. After delivery, for an hour and a half or two hours, she appeared to do well; after this, however, she began to fall off, and, in spite of all our exertions, she died in about five hours after delivery. Not a drop of blood was lost after noon on Monday preceding the delivery.

A question of great practical importance presents itself here. Ought we, on Monday, to have disregarded the prostration, after the discharge had ceased, when there was not the least evidence of uterine contraction, and the os uteri opened about the size of a dollar, although dilatable, and when the only alarming feature of the case was pure prostration and debility, to have thrust the arm into the vagina, dilated the os uteri, and removed its contents? Had this been done, I feel confident she must have died under the operation. The course pursued was I think the one indicated by the situation of the patient; and had the pains consequent to uterine contraction been delayed another day or two, she would have assuredly survived the delivery. Had we not satisfied ourselves on Monday, so far as it was possible, that there was no further danger from hemorrhage, because of the placenta being entirely detached, the indication might have been different. Here it was certainly to

calm the nervous agitation, and by means of brandy-toddy, chicken soup, nourishing gruels, &c., to restore tone and strength to the system, to enable it to sustain the shock of the delivery. This we partially succeeded in doing; but labour came on too soon for her strength to bear it.

Case IV.—*Flooding in the early months of Pregnancy not followed by Abortion.*—The following case is similar in some respects, but terminated more favourably. On the 2d of September, 1851, I was requested to see, in haste, another lady, in consultation with Dr. Gregg; from him I learned that he had been summoned to her about midnight, for what she supposed was colic. He prescribed for her, she got easy, and he went home. About 7 o'clock next morning he was sent for in great haste to see the patient, on account of excessive flooding. She was at her eighth month of gestation, and from over exertion the day previously had brought on the unfortunate state of affairs then existing. She was completely blanched, and so prostrate that she could scarcely speak distinctly; the flooding had nearly ceased when he arrived. When I saw her, it was evident, from her moaning, that she had regular uterine pains, though too trifling to do any thing towards evacuating the uterine contents. The fœtus was too high up to make out the presentation satisfactorily; the placenta was *not over the os uteri*, nor could it be felt with the finger in any direction. The pains being regular but inefficient, and the flooding continuing to a considerable extent, we at once gave ergot in decoction, and warm brandy and water as freely as she could take it. The ergot soon increased the pains, and the head descended into the pelvis; we immediately applied the forceps, and in a few minutes delivered her; the placenta followed the child, and had been cast off from its attachment at the fundus uteri when the great flooding occurred. We remained some hours with her after delivery, and she gradually recruited, and is now entirely well.

In this case, the obvious indication was delivery at once, as the uterus had taken on regular contractions; but from debility, the consequence of loss of blood, they were inefficient, and required assistance. A very different case from the former one.

The two following cases were attended with circumstances I do not recollect having seen recorded, and they are believed to be very uncommon:—

Case V.—*Flooding not followed by Abortion.*—Early in March, 1851, I was requested to see a young married woman, who believed herself to be in the third month of pregnancy, and was discharging blood freely from the vagina. She was in bed, very much alarmed, and flooding, though not to an alarming extent. I soothed her fears, advised perfect quiet, in a horizontal position, and assured her that there was no danger to herself, but that she would certainly lose her fœtus. She continued about a week in her room, most of the time in bed, but continued being *"a little unwell."* She was anxious about getting to housekeeping, and went about as usual, and, in a few days, another free flooding came on, so that she required attention, rest, &c. This went by, and she continued with a slight discharge almost every day; sometimes for a day or two it would cease; but it invariably returned again, but not to such an extent as to occasion alarm. On the 3d of September I was sent for, and in a few hours delivered her of a fine healthy child, and she recovered without an unpleasant symptom. She went her full time, after having had two severe floodings, about the third month, and nearly

constant oozing during the whole term of gestation. I never have seen any other case in which such free floodings, in the early months, were not followed by abortion.

Case VI.—*Discharge of Water per Vaginam during Pregnancy.*—On the last day of April, 1851, I was requested to see a lady, pregnant the fourth time. Her two last confinements had been at the end of the eighth month of gestation; the children were very small, and both died within three or four months after birth. On this occasion, she had been for about two weeks constantly troubled with a dribbling of water from the vagina, with constant uneasiness, amounting almost to pain in the pelvis. She felt uneasy about her situation, and wished my advice. She supposed she was two months pregnant. On a rigid investigation I became satisfied that it must come from the uterus, and told her she would certainly abort. I bled her, enjoined quiet, light, digestible food, and requested to be sent for if she got worse. I saw her husband frequently, at intervals, afterwards, and learnt that the same draining of water continued almost constantly. I was requested to see her again, about the middle of July. There was the same draining going on, but to a greater extent than previously. She had quickened; her health was perfect, and as she was full and plethoric I bled her again, eight or ten ounces; told her I adhered to my former opinion, that she could not go her time out; to be cautious about accidents from missteps, &c.; and on the 31st of October I was sent for to her in labour, and in a few hours delivered her of a very small, though apparently perfect child. It still lives, but is small and very delicate. At the time of birth there was no accumulation of waters, nor was there any particular dryness of the parts, but the labour was very like a common one after the waters are drained off. I inquired particularly about any gush of waters, as I thought the membranes had ruptured before my arrival, and was assured there was none; that she had been no way different from what she had been all the time since I first saw her, viz., a constant draining of water, but now she had pain. This was at the end of the eighth month again, according to both the *long* and *short* modes of reckoning; so that she had been confined three successive times at the end of the eighth month of gestation; the last time, the membranes rupturing at the second month, and the liquor amnii constantly draining away, and yet she did not abort.

The question has sometimes been asked, ought the umbilical cord ever to be cut before the delivery of the child? To this I would reply affirmatively; that the safety of both mother and child sometimes, though rarely, requires it, the following cases will serve to exemplify.

Case VII.—*Labour, Funis around Neck of Child.—January* 28, 1830. I was called to Mrs. B., at three o'clock A. M., in labour with her first child. In sixteen hours the head was expelled. I at once detected the cord three times round the neck of the child, and crossing the front of the chest. The pains were powerfully propulsive, and it was impossible to liberate a coil of it in either way. The child could not advance, and was evidently strangling from the tight compression of the neck. Under the circumstances, I feared either a rupture of the cord, or a inversion of the uterus; she had had three violent pains in this situation. I stated the difficulty to the attendants, and that it would be necessary to expose the female, tie the cord, and cut it before the child could be born. They at once urged me to do whatever was right. I immediately tied it with two ligatures, and cut between them, and

with the next pain the labor was completed. As the body was expelled I found the cord had passed first down between the legs, then up over the right side, crossed the thorax in front, and the first coil around the neck was from the left side; after pursuing this course it was three times round the neck. The child was asphyxiated, of a deep blue colour, but it revived, and grew, and became a fine healthy child. Safety to the mother and child required this procedure in this case. I regret that I neglected measuring the length of the cord.

The difficulty here was the result of the great length of the cord. Since the above case I have seen another very similar. In this the cord was twice round the neck, and it was impossible to liberate it, nor could the child advance as it was. I pursued the same course, with the same results. In either of these cases I am certain any other procedure would not have terminated so favourably. But I have seen, in one case, the same difficulty from a reverse cause, that is, a short cord.

Case VIII.—*Excessively Short Funis.*—On the 1st of February, 1851, I delivered Mrs. H. of twins. Both were expelled before I cut the cords; but after the expulsion of the first it was drawn up so close to the vulva that my only resource was to tie and cut the cord as far *within the vulva* as it was possible for me to reach. I could apply but one ligature, and cut beyond it, at least three inches within the os externum. As soon as this was liberated, I was not disappointed in discovering another child there. It came on within half an hour, and exactly the same difficulty existed as with the first. I had to do as with the first, and every thing terminated favourably. Each child had its own separate placenta, the first occurrence of this kind I had met with, in some thirty or more cases of twins. In this case it did not occur to me to measure the cords, but I think they could not have exceeded six or seven inches.

Chester, *January* 17, 1852.

Art. X.—*Cases of Hemorrhage from the Umbilicus after the separation of the Funis.* By W. C. Bailey, M. D., of Spencertown, N. Y.

I delivered Mrs. B., aged 24, on the 31st of March, 1849, of her second, a well-formed male child. The first, a female, now 4½ years old, is living. The labour was short and easy; child weighed soon after birth six pounds, and there was nothing in its appearance to attract particular notice; the cord came off the third day, leaving a very small granular point unhealed within the umbilical pit. On the following day, the cicatrice was so far retracted as to become invisible. Sixth day, bowels inactive; stools clay-coloured; administered ʒss ol. ricin., followed by syrup of rhei et tarax. Seventh and eighth days, bowels somewhat improved; child does not cry except when the legs are extended. Ninth day, on dressing the child in the morning, the cloths over the umbilicus were stained with blood, but no hemorrhage occurred during the dressing; at night, the cloths were again found sodden with blood; nurse applied compress of cobwebs, adjusting the bandage so as to make slight pressure. Tenth day, hemorrhage returned at 10 o'clock A. M. When I saw it, the blood was

escaping from the bottom of the pit, and, on wiping it out, I could distinctly see a fine jet of blood from the left side towards the right with a pulsatile motion; the precise point from which it came I could not see, it being hid by the tortuous and uneven walls of the pit. Applied in turn acet. plumb., tannate of lead, sulphate of zinc, nit. argent., all of which only increased the hemorrhage; next applied the actual cautery, which increased the hemorrhage more than fourfold. 6 P. M. resolved to encircle the umbilicus with a double ligature: the first prick of the needle brought me to a stand, as hemorrhage took place freely the moment the skin was punctured; I then had the thumb of an assistant applied, with direction to keep up a steady and gentle pressure. In this I was equally unsuccessful, the blood would gush first from one side then the other. From this time, no further effort was made to check the bleeding; much blood had been lost and the extremities were growing cold, notwithstanding care had been taken to keep them warm; the skin blanched to almost absolute whiteness. 10 P. M., hemorrhage had stopped; warm beef tea, milk and carb. ammon. had been administered at intervals; pulse too frequent to be counted; gradually losing temperature; died from exhaustion at 3 o'clock following morning, the eleventh day from birth and forty-eight hours after the first appearance of hemorrhage. Four hours after death the body assumed a bright saffron colour. No autopsy was made.

Case II.—April 29, 1849, I attended Mrs. S. in her fourth confinement; labour easy, short duration; the child, a male, well-formed, and to every appearance, healthy; weighed eight and a half pounds. May 1, I saw the child; icterus existed over the whole body; prescribed hydrarg. cum cret. followed by three-quarters of a drachm of ol. ricin., and subsequently infusion of tarax. The mother and child were left in the hands of a negro woman as nurse, who claimed to herself great skill in treating infants. May 11, I was sent for to see the child; its appearance was as follows: skin of a dirty yellow, tongue thickly coated with a brownish-yellow fur; features sunken; bowels constipated; stools clay-coloured, scanty; the medicine previously left had not been given according to orders; hemorrhage from the umbilicus had taken place six hours previous to my arrival, but had stopped without any application being made. Prognosis, death inevitable. As I learned, the child died without further hemorrhage, May 12, the thirteenth day from birth, twenty-four hours after the first appearance of hemorrhage.

Case III.—March 26, 1850, Mrs. B. was again delivered of a child, a female, plump and apparently healthy, weighing seven and a half pounds. Nothing unusual occurred during the three following days. Fourth day, cord came off, leaving the umbilicus considerably above the surface of the bowels, with but slightly depressed umbilical pit; cicatrice perfect, and no unhealed points could be discovered. The patient was constantly watched, close attention to every function, which, in my judgment, could in any way prevent a similar occurrence to the previous cases; no application was made to the surface, as there was no seeming occasion for it. April 2, eighth day from birth, child stupid throughout the day; could not be kept sufficiently awake to nurse; bowels constipated; stools clay-coloured; icterus; ol. ricin. given, which relaxed the bowels; slight improvement in colour. April 3, ninth day from birth, morning, dressing cloths sodden with blood; on removing the dressing, the hemorrhage had stopped; a moistened leaf of matico was carefully laid over the umbilicus, with lint and bandage; 4 o'clock P. M., blood was discovered through all the dressings into the blankets beneath; applied anhydrous sulphate of alum in powder; lint and bandage; hemorrhage stopped; child stupid; cries only when the legs are extended from the pelvis; nursed

freely through the night. April 4, tenth day from birth, hemorrhage returning morning and evening, but slightly; administered one grain of calomel, followed four hours after by three-quarters of a drachm ol. ricin.; general appearance of patient, same. April 5, the hemorrhage returned at 1 o'clock P. M., colour of the blood bright-red; quantity much increased. Dr. E. Reed, in consultation. Ligature, the only plan which seemed to offer a hope for arresting the hemorrhage; this was performed by passing two needles through the skin at right angles, and passing a strong ligature under the needles, drawing sufficiently tight to prevent farther hemorrhage. The patient was now laid upon a soft pillow, handled with extreme care; diet of warm beef tea, cow's milk, and nursed four or five times each day at the breast; hydrarg. cum cretâ gr. ii, every day; ℥iss ol. ricin. every other day; this plan was followed for the eight following days, during which time purpuric spots appeared upon various parts of the body; over the left scapula and nates were ecchymosed spots as large as a dime, somewhat elevated above the general surface: these spots increased in number and size. Six days after the ligature was applied, ecchymosed spots appeared within the mouth, upon the gums, and under the tongue; mucous membrane of the mouth red throughout; slight stains of blood passed the bowels. Eight days after the ligature was applied, being the nineteenth from birth, and eleventh from the commencement of hemorrhage, the ligature with needles came off, leaving as perfectly formed an umbilicus as the first; no sponginess was perceptible, but there was a spongy raw surface one-half inch to the right and below the umbilicus, some six lines in length and four in breadth. It was dressed with zinc. ung.; bowels relaxed, slightly tinged with bile also streaked with blood; urine bloody. April 15, 16, and 17, little change in patient except nipple stained with blood. After being nursed, still no blood could be discovered oozing from the mouth; 18, 19, 20, more restless; patient occasionally appears to have colic: paregoric gt. x; blood continues to stain the nipple and dressing; skin paler. April 21, slight oozing of blood from the centre of the umbilicus, morning and evening; urine bright-yellow; skin icteric; applied the matico and compression; the slight hopes that existed after the apparent success of the ligature now were entirely gone. Prognosis, inevitable death. April 22, hemorrhage morning and evening, the same as the day previous, except slightly increased; extremities cold; skin deeper yellow; colic pains more frequent and severe; restless, except when under the influence of opiates. April 23, hemorrhage increased morning and evening; treatment the same. April 24, hemorrhage began early, more violent; extremities resisted every effort to move them; pulse too frequent to be counted; respiration very frequent, with an occasional intermission of several seconds. Death took place at 2 P. M., being the thirtieth from birth, the twenty-second from the commencement of hemorrhage, the eleventh from the time the ligature came off, and the fourth day after the second attack of hemorrhage. No autopsy was made.

Remarks.—The mother of the children, in the first and third cases, has been delivered of her fourth child, a male now six weeks old, to all appearances perfectly healthy. There has been but little difference in the condition of the mother during her four pregnancies. The four children weighed respectively nine, six, seven and a half, and nine pounds. There is no known hemorrhagic idiosyncrasy entailed from ancestors. Grandparents all living; also four great-grandmothers and one great-grandfather, all of whom enjoy a good degree of health. I am satisfied the curative treatment recom-

mended by Edward Ray, Esq., in the October number (1849) of the *Am. Journal of Medical Sciences*, viz., ligature, was fairly tried in my last case. The hemorrhage was arrested from the umbilicus for eight days during the time that the ligature remained, and six days after it fell off (in all fourteen days). That the disease is congenital, as appears from the cases reported by Dr. H. J. Bowditch in the same Journal, I am fully satisfied.

Summary.—In these cases, the two children of one mother died from prostration induced by hemorrhage; both had bloody dejections from the bowels, and one from the urinary passage. In both there was more or less extravasation of blood under the cuticle; in one it escaped from the mouth. Both cried when the legs were straightened down, and both nursed the mother as those now living. The mother menstruated regularly while nursing her first child, and has once since the birth of her last, and both depended upon the mother's breast for sustenance. During the last pregnancy, slight emetics of ipecacuanha were administered, at intervals of a few weeks, twice. Nausea without vomiting was only produced by the ipecac. Nausea did not exist during the two previous pregnancies, and but slightly in the last, except when it was produced artificially. I have consulted with several older physicians, of much obstetrical experience, with reference to prevention and cure. The information thus obtained was of no service to me in the last case. There were no unusual occurrences in the two pregnancies which I could consider peculiar—none but that had existed in other child-bearing women.

Spencertown, N. J., *April* 24, 1851.

Art. XI.—*Case of Nightmare caused by Elongation of the Uvula, and cured by the Astringents administered during an attack of Cholera.* By John H. Rauch, M. D., of Burlington, Iowa.

—— —— is a young lawyer, with whom I became acquainted in May, 1850. He was of a pale and feeble aspect, and extremely nervous, the sight of blood causing him to faint, as also disagreeable thoughts and objects; he in one instance swooned while sitting in a room where the operation for cataract was being performed, he not seeing the operation. He occupied a room on the same floor of the hotel with me, and I had frequent opportunities of seeing and speaking with him. I soon perceived that previous to speaking or swallowing, a peculiar spasmodic action took place, as if he had to remove something from his throat; this done, he could speak and swallow freely. He was extremely sensitive, now cheerful, then depressed. For the last three or four years, he suffered almost nightly from the nightmare, and at that time the recurrence of the attack was more frequent and increasing, he

often having it three or four times during a night, making sleep anything but pleasant and refreshing to him. His sufferings can be better imagined than described; they affected his general health, and exercised a very depressing influence upon his nervous system, so much so that I thought of advising him to return to the east, to spend the remainder of life with his friends. He dreaded the approach of night, and made it the particular business of his friends, who roomed near him, to awaken him should they retire after he did.

One day while witnessing the effort he made, previous to his being able to speak, I asked him to look at his throat, to which he readily acceded; and, upon examination, found his tonsils slightly and his uvula greatly enlarged. I was immediately satisfied that the elongation of the uvula was the cause of the difficulty he was labouring under when first attempting to speak or swallow; not thinking, however, that it also was the cause of the nightmare.

In the early part of the month of August, he had an attack of cholera. He suffered much from prostration and heat, but more so from the feeling of faintness and suffocation that harassed him constantly; so agonizing was it, that upon several occasions he thought he was dying. As the cholera symptoms improved, the nightmare disappeared, and since then he has had but two slight attacks, and these were directly traced to having a sore throat. His health is good, he looks well, and is heavier now than he ever was before, and his uvula is not half as large as before the attack of cholera.

While suffering from an attack of nightmare, he has often described his feelings as being almost intolerable, and breathing next to an impossibility. He had no power to move or speak, and the only effort he could make to arouse himself was that of loud and heavy breathing, and the exertions he made to throw off the incubus increased it. After he got over the nightmare, which, though it might last but a few minutes, seemed to him an hour, he would be pale and exhausted, and in a profuse perspiration. During this time he was fully conscious of where he was, and what was going on around him.

The reading of the case reported by M. West, of Belgium, in the January number of this Journal, reminded me of the case above stated, and fully convinced me that he was cured by the astringents administered during the attack of cholera.

Burlington, Iowa, *December* 1, 1851.

REVIEW.

ART. XII.—*The Transactions of the American Medical Association, instituted* 1847; Vol. iv.; 8vo. pp. 677. Philadelphia, 1851. With four coloured plates and a map.

THE appearance of a fourth volume of the *Transactions of the American Medical Association*, naturally suggests the inquiry: What influence has the Association produced upon the condition of the medical profession in the United States? Have any important reforms been effected through its agency? Has it succeeded in practically elevating the standard of medical education in this country? In short, have the beneficial results anticipated from its organization, by its original advocates, been, to any considerable extent, realized?

It was predicted by a few, from the first period of its organization, that the National Association would prove a nullity, its influence upon the profession being ineffective for either good or evil; many exhibited towards it a perfect apathy, whilst others, enlisting themselves on the side of such medical teachers as look more to the size than the material of their classes, and care less for the qualification of the pupils sent forth by them to practice than for their own emoluments, set themselves in open opposition, and exerted every means to thwart the measures adopted by it, and to render inoperative its recommendations.

But, notwithstanding these sinister prophecies, the lukewarmness of one part of the medical profession, and the opposition of another, the National Association pursues a firm, dignified and onward course, discussing calmly the evils under which the medical profession of the United States has so long laboured, investigating their causes, and suggesting the means for their removal; and already its influence is beginning to be felt by the great body of the medical profession throughout the length and breadth of our land.

It is true the Association has not as yet effected, to its full extent, the reform at which it aims. It has not succeeded in elevating our profession to that high rank in public estimation to which it has so just a claim, as well from the important benefits it confers upon society at large, as from the talents, the scientific acquirements, and moral dignity demanded of its members, for the faithful discharge of their professional duties. The ranks of our profession, it must be confessed, are still disgraced by the intrusion into them of ignorant and incompetent persons, owing to the facility with which the degree of Doctor of Medicine may be obtained by any one, after a few months' attendance upon an incomplete and superficial course of instruction; the evidence of character and professional attainments, which admission to the doctorate should always afford, being thus virtually nullified.

But although the National Medical Association has not yet accomplished, within the short period it has existed, all those reforms in the medical profession its projectors anticipated from its organization; reforms, for the full accomplishment of which much time, patience, deliberate council and firm but prudent action will be still required; it has nevertheless exercised a decidedly beneficial influence, and is acquiring yearly the increased confidence and fealty of those whose interests it professes to represent.

By enforcing the necessity of demanding satisfactory evidence of the possession of proper qualifications, on the part of those who would enter upon the study of medicine, and of a thorough professional education previously to commencing the duties of a practitioner; by promulgating a code of ethics calculated to preserve harmony and good faith in the intercourse of the members of the medical profession with each other, to protect the rights of the patient as well as of the physician, and to elevate his moral standing with the public at large; by promoting the formation of County and State Medical Societies, thus enlisting the individual members of the profession in the work of reform, and enabling all to realize the important fact that the interests of the individual can only be secured by securing the interests of the profession as a body; and, finally, by encouraging, as far as their limited means and the scope of their influence will permit, the formation of a national medical literature, the American Medical Association has already accomplished much; it has certainly laid the foundation for the success of those measures that are necessary for the completion of its work.

In the proceedings before us, those of its fourth session, the Association has exhibited the same firmness and unanimity in maintaining the broad principles of reform originally laid down by it; the same hopefulness in their final triumph over the selfish interests and mistaken views both as to the wants of the country and also the number of our youth who would be found willing and competent to devote themselves with untiring zeal to the faithful study of medicine, upon which much of the opposition to these reforms is at present based.

The following resolutions appended to the Report on Medical Education, and concurred in by the Association, evince no change of opinion on these important subjects, and show how ill-founded was the prediction of those who desired that the Association should recede from their former decision in regard to them.

"*Resolved*, That the abuses which exist in the modes of medical education pursued in this country, demand the serious consideration of the profession.

"*Resolved*, That free discussion in relation to their causes, is an important means of effecting their removal.

"*Resolved*, That, in the opinion of this Association, no effort to remove these abuses can succeed, that is not based upon a reform in the public sentiment both of the profession and of the community.

"*Resolved*, That, the reform, so far as the profession is concerned, is to be effected mainly, through its organization, and that it is, therefore, incumbent upon every physician to do all that he can to give them character and efficiency.

"*Resolved*, That this Association have confidence in all proper efforts which have for their object a reform in the sentiments and practice of the community in relation to medicine and the medical profession.

"*Resolved*, That the recommendations of the Association at its former meeting, in regard to education, both preliminary and medical, be reaffirmed, and that both the schools and private preceptors be still urged so to do their duty as to secure to the community a well-educated profession.

"*Resolved*, That, in the work of medical reform, while all precipitate movements should be avoided, we should aim at a steady advance, from year to year, until a thorough system of education be established throughout our country."

Among other proceedings of the Association, a very important and certainly judicious alteration of the Constitution was adopted, by which most of the *Standing* committees were abolished, and in their place *Special* committees created, to report on particular subjects—to eight of these committees being submitted the investigation of the epidemic diseases of specified sections of the United States. The chairman only of these committees is nominated by the Association. He to "select, at his earliest convenience, two members of the Association to complete the committee."

This new arrangement of the Committees is a very decided improvement upon that previously existing; we fear, however, that the Association have erred in appointing too large a number of them: nevertheless the subjects selected for discussion are replete with interest, and, provided the members of the several committees perform their duties with any degree of faithfulness, their reports cannot fail to add to the common stock of medical knowledge, and materially enhance the character and influence of the national Association.

The reports of the former Standing Committees are all, we admit, interesting; many of them are, indeed, particularly valuable. But while some of them were necessarily a mere recapitulation of subjects that had already been in possession of the profession, either in the journals where they originally appeared, or in the excellent summaries appended to nearly all our medical periodicals, others again, from the want of a due circumscription of the subjects falling within their scope, were made up, to a certain extent, of a mere repetition of the materials embraced in the reports from other committees, presented at the same session. It is, perhaps, to be regretted, that among the subjects referred to special committees, at the last session of the Association, that of medical education was forgotten. The reports that have been already made by the former Standing Committees on this subject, valuable as they are, have by no means exhausted every subordinate question involved in the general topic; several of these have been barely hinted at, a more thorough discussion of which would no doubt lead to greater unanimity of opinion and concert of action among those to whom, in this country, the education of candidates for the doctorate is entrusted. Until this important result is attained, it is, at least, important that the subject of medical education should be kept constantly before the profession, and its claims upon their serious attention, as the only basis upon which any permanently beneficial reform in the character and standing of the American Medical Profession can be secured, repeatedly urged.

Besides the special committees just referred to, the Association, "as an additional means of securing valuable contributions," have created a general committee, whose business shall be, in the intervals of the sessions, "to receive original volunteer papers upon any subject which their authors may choose, to decide upon the merits of these papers, and to present to the Association at its next session, such of them as they may deem worthy of receiving this distinction." "A prize of fifty dollars, or a gold medal of that value, to be awarded to each of the five papers presented to the Association, or any smaller number of them, which the committee may consider most meritorious, and the Association may resolve to publish."

This plan, it is believed, is calculated to work well. If it shall elicit, annually, a single contribution of equal value with that of the prize essay appended to the present volume of "Transactions," this general committee will become, certainly, a most important means of enlarging the sphere of usefulness of the Association.

The greater portion of the volume before us, as of the preceding ones, is occupied by the reports of the Standing Committees.

The first of these, that of the *Committee on Medical Sciences*, is drawn up by Dr. Dowler, of New Orleans. This report, although written in the peculiar and, as we conceive, vicious style of its author—abounding in new coined words, and novel phrases, alien to a pure English diction—contains, nevertheless, a fair exposition of the more important facts in anatomy and physiology, medical chemistry, pharmacy, therapeutics, and pathology contributed by American physicians, during the preceding year, as well as the general inferences

in one or other of these departments of medical science, deducible from observations recorded by them within the period alluded to.

The great object of the reporter has been, as he states, to bring together "such facts as possess a scientific bearing or suggestive import," and to "connect them by threads of thought," although, from the very restricted scope of the reporter, who is confined to American authorities, and to the limits of the year gone by, "the warp and the woof" at his disposal "will seldom be sufficient to produce anything resembling a uniform and extended fabric."

The report of Dr. Dowler will be read with interest—the author has succeeded in throwing a form of originality over materials that had already been in possession, of the reading portion at least, of the profession.

We quote the following remarks on numerical medicine with which the report closes. The importance of medical statistics is too much overlooked in all the departments of our science. Some affect even to doubt the accuracy of the data determined by the numerical method; these will usually be found to be closet speculators, whose time is spent in the interpretation of facts in accordance with a preconceived theory; but who often, however, occupy a situation which gives to their wildest speculations a certain degree of currency.

"It is deemed," Dr. D. remarks, "not inappropriate, on this occasion, to offer a few suggestions upon the importance of numerical medicine, since it has an extensive bearing upon the progress of general pathology, morbid anatomy, surgery, therapeutics, hygiene, and the science of population. Instead of copying in whole or in part for republication, the able contributions made on this subject, during the year, it is hoped that a brief allusion to the method itself will not be unacceptable.

"What is numerical medicine but a rigid application of the method of observation and experiment, upon a large and efficient scale, in order to obtain deductions of the greatest possible certainty from identical or similar groups of naturally joined phenomena, by means of analytic averages and comparisons? Progressive and practical in its character, it promises no royal road to knowledge, no exemption from labour, no claims of infallibility; yet, faithfully applied, it contains in itself the element of self-correction, when errors, for example, have crept into its calculations. The numerical, in common with every other method, labours under this disadvantage, namely, that it does not infallibly guide us in diagnosing, classifying, and interpreting facts. Hence, if all the pertinent facts do not enter into the calculation—if facts not truly relating to the subject of inquiry be admitted—if facts having a different import be reckoned, or if such facts only be selected as favour the preconceived theories of the observer, then, of course, the comparisons, averages, and deductions cannot be true, while, at the same time, they simulate truth so completely that error is not easily detected.

"Numerical medicine is, from the nature of its method, cumulative. One of its first advantages frequently consists in giving a starting-point, rendering an anticipating generalization or law, more or less probable, in advance of *exact results;* this probability is constantly increased, constantly approximates certainty by multiplying the observations, and by separating the facts which are non-essential, accidental, and contingent, from such as truly represent the doctrine, properly deducible from a general family or group of phenomena; implying a constant use of both the analytic and synthetic modes of ratiocination. In medical researches, variations, discrepancies, and errors may be often corrected, always lessened, by the multiplication of careful observations.

"It has been urged, as an objection to numerical medicine, that it is inapplicable to the human body on account of the variable and complex character of its phenomena; but this very character affords the most valid reason in favour of this method of investigation. Do those who oppose this method expect to find more instruction in a single fact than in whole battalions? He who opposes numerical reasoning, and offers his own experience as proof, is really only confirming it in both principle and practice; for his deductions differ only from

numerism (?) in being based on fewer facts—a more limited observation! Some mistake numerism, in supposing that it does not regard the exceptions. If a certain exceptional set of causes require a treatment different from the majority, it is not to be treated as the majority, having been identified as a different process, only to be elucidated by numerical evidence. One therapeutic method cures fifty, and another seventy-five, in every hundred cases; then, of these two methods, the latter is numerically found to be preferable, though it may not be the best possible; for, by not following either method, or by adopting a different and better one, and by properly classifying cases not suitable for either of these, the proportion cured may possibly be greatly augmented, and the more so as the practitioner's diagnostic and therapeutic discrimination approaches perfection. Here, synthesis and analysis, observation and ratiocination, go hand in hand; indeed, they are never antagonistics, being conjoined in naming, counting, describing, arranging, and appreciating facts. It is the numerical history of operative surgery, of the Cæsarean section, of lithotomy, of amputation (immediate or secondary), not to name other examples, which, in many cases, determines the conduct of the surgeon and the fate of the patient. 'Statistical results,' observes M. Malgaigne, 'have for a long time been considered as among the most solid foundations of solid practice.' If numerical results be as yet unsatisfactory, if but few probabilities and still fewer truths have been eliminated, and if some errors have been propagated in the name of numerism, the fault is not in the method, but in its misapplication."

The report next in order is that of the *Committee on Practical Medicine.* This is a very elaborate and carefully drawn up paper. The subjects assigned to this committee are, the more important improvements effected in this country in the management of individual diseases, and the history of the epidemics of the preceding twelve months. Dr. Austin Flint, of Buffalo, N. Y., the author of the report, very pertinently remarks, in reference to the first branch of subject to which the labours of the committee are directed:—

"In the endeavour to form just conclusions respecting the merits of new views of the treatment of diseases, it is obvious that considerable difficulty may be experienced on the part of the committee, arising from the fact that a just estimate of accessions to therapeutical knowledge, involves, not alone the impressions they may produce as abstract propositions, but an inquiry into the number and validity of the facts, developed by observation, upon which they rest, as well as the correctness of the inductions by which they have been reached. The precise amount of force appertaining to the latter may not be readily appreciated. Various circumstances may stand in the way of yielding, promptly, either assent or denial to novel conclusions submitted for adoption, and prudence often dictates a suspension of judgment until more proof accumulates, or until the testimony of others has been corroborated by personal experience.

"In view of these considerations, the inquiry arises, in how rigorous a sense shall the phrase, 'important improvements' be taken, as expressing the qualification entitling therapeutical propositions to enter into this report? Shall the committee recognize those propositions only which they fully believe to embody important improvements, or shall a more liberal construction be followed, allowing a wider scope, so as to embrace whatever, in the estimation of the committee, may present claims sufficient to merit the attention of the Association? The interests of medical science, justice to those desirous of contributing to its progress, and a due distrust of judgment on the part of the committee, seem to point to the latter course as the most proper and useful, and it will, therefore, be pursued. Agreeably to this plan, those measures proposed for the better treatment of diseases will be noticed, which, from their origin, intrinsic character, or the evidence adduced in their behalf, the committee shall deem to possess such importance that their value should be carefully examined and tested. This course, it will be perceived, is removed on the one hand, from that extreme of latitude in the constructive sense of the phrase referred to, which would rank in the class of improvements everything new, merely on account of its novelty,

as well as, on the other hand, from a rigorous adherence to phraseology which would exclude anything, however promising, the precise position of which, as an improvement, remained to be determined.

"It would be unfair to measure the actual improvement effected within a brief space of time, by the number and character of the prominent developments that may have transpired during that period. Important changes for the better may be going on by means of the greater extension and wider application of views already promulgated, without the acquisition of even a single novelty. If, therefore, a retrospect of the past year should not disclose instances of presumedly important improvements so numerous and notable as might be desired, an inference should not be drawn unfavourable to the progressive character of American practice. Important improvements in practical medicine may consist in the introduction of new measures relating to the treatment of diseases, and in an increase in the extent and efficiency of the application of measures which are not new. Carrying this analysis somewhat further, it is apparent that improvements may differ much in kind, aside from intrinsic peculiarities belonging to different measures respectively. They may embrace the introduction of new remedies, or the discovery of new remedial applications of some remedies already in use. They may involve new principles of treatment, or new modifications of principles already received. They may comprehend facts and testimony tending, on the one hand, to confirm the value of therapeutical measures whose claims are not fully established, or, on the other hand, to define more correctly the proper position of measures that have been over-estimated. It is not to be overlooked, that improvements in the management of individual diseases may not be less important which consist in the abandonment or limitations of the use of remedies, the employment of which has been injudicious or excessive, and in relinquishing principles proved to be unsound and unsafe. In other words, the progress of practical medicine may be as distinctly evidenced in the lessened interference of medical art, as by an increased number and enlarged application of curative agencies."

In accordance with this very liberal but not altogether overstrained definition of the term "important improvements," Dr. Flint presents a very interesting and instructive digest of the experience and observations recorded by American physicians during the period over which the report extends.

The most important diseases to which the therapeutical observations embraced in the present report have reference, are dysentery, in its epidemic and sporadic forms; croup; pulmonary tuberculosis; tetanus; and typhoid, intermittent, remittent, and congestive fevers.

After adducing the observations in regard to the treatment of dysentery, derived from the several papers contained in the medical journals of the preceding year, Dr. F. offers the following general summary.

"Considering the great diversities of character which an epidemic disease is apt to assume in different sections of country and seasons—diversities from which dysentery is certainly not more exempt than other epidemics—the practical views of a pretty large number of observers, which are presented in the foregoing collection, exhibit, in some important features, a uniformity which is worthy of note. It is to be considered, moreover, in this view of the subject, that the different observers, by whom these practical views are contributed, are not only remotely situated with respect to each other, but there is no reason to suppose that the several communications had any connection with each other by way of suggestion or otherwise.

"In so far as the facts and opinions embraced in these communications are to be considered as supplying data for an induction, the several conclusions may be summed up as follows:—

"*a.* In the management of epidemic dysentery, as it has prevailed at the places and periods referred to in the papers that have been contributed on the subject during the past year, depletion by blood-letting, cathartics, and the free use of mercurials are not required, but will be likely to do harm.

"*b.* Opium, exhibited in decided doses, exerts a salutary influence in relieving painful symptoms, and controlling the severity of the disease.

"*c.* The nitrate of silver is a valuable remedy, employed with a view to a local and general effect.

"*d.* Tannic acid, and the acetate of lead, under circumstances denoting the propriety of astringents, are useful remedies.

"*e.* To support the powers of the system by a timely resort to tonics, stimulants, and alimentation, is an important end to be kept in view in the treatment.

"These propositions embody therapeutical principles by no means entirely new, and it is difficult to ascertain to what extent they are in conformity with prevailing opinions. The committee are, therefore, unable to say in how far they are to be considered in the light of an improvement in the management of the affection to which they relate."

On the subject of cod-liver oil as a remedy in pulmonary tuberculosis, the following remarks of the reporter may not be uninteresting to a portion, at least, of our readers.

"In view of the numerous remedies that have heretofore been supposed, for a time, to exert a curative agency in an affection which, in a large proportion of cases, has always baffled the resources of medical art, the question naturally arises: Will this share the fate of its predecessors, and after a time fall into disuse, or does it possess virtues that will secure for it a permanent position in the confidence of the profession? In so far as facts contributed during the past year may tend to supply an answer to this question, it will be practicable to determine the extent to which the improvements in practical medicine, during that period, relate to the employment of this remedy. It is remarkable that, notwithstanding the immense quantity of this medicine consumed, and the large number of cases in which it must have been directed by physicians within the short period that it has been in use, very little has been communicated during the year respecting its remedial power. The committee have noted but two contributions on the subject. One of these is a paper by Dr. James J. Levick,* resident physician at the Pennsylvania Hospital, Philadelphia; the other is by Dr. Gerhard, of Philadelphia, in the third edition of his treatise on *Diseases of the Chest.*

"Dr. Levick's paper contains notes of *fourteen* cases of phthisis, the disease being demonstrated by unequivocal physical signs, which were treated in the medical wards of the Pennsylvania Hospital, under the care successively of Drs. Wood, Pepper, and Gerhard, attending physicians to that Institution. In *all* the cases, the disease was in an advanced stage. In *six* of the number, there were present the physical signs of a cavity in each lung; in *six*, a cavity existed in one lung; and in the remaining *two* cases, the disease had advanced to the stage of softening, In none of the cases was a cure effected, although in one case there was a very marked improvement in the physical signs, as well as relief of all the general symptoms. There seemed to be an approximation to a cure in this instance. The results in the other cases are thus stated: 'In *five* the disease, though terminating fatally, appeared to be for a time arrested, and there was in these cases a decided though temporary increase of strength. *One* patient left the hospital somewhat improved, and *five* were so much benefited as to be able to return to their former occupations, believing themselves to be well; and, so far as the rational symptoms were concerned, they were really so; while in but *two* instances do we find an entire insusceptibility to any good influence of the remedy.'

"These results, although by no means commensurate with the sanguine expectations held out by some writers, appear to show a positive salutary influence. Allowance must, however, be made for the more favourable hygienic conditions in which the class of patients that seek relief at hospitals are placed irrespective of medicinal treatment. Cessation of labours and of the exposures

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incident thereto, comfortable quarters, and a wholesome nutritious diet, are frequently adequate, in themselves, to effect a striking improvement in the symptoms of patients affected with this disease. If the sanitary influences of an hospital be not of the most favourable character, in an affection of this nature, they are often much superior to those from which the patient has been transferred. Another consideration is entitled to more or less weight, in estimating the value of a remedy for tuberculosis like the cod-liver oil, which, to say the least, if it be not useful, cannot be supposed to produce any active deleterious effects. In conjunction with better hygienic treatment, it has supplanted measures of therapeutics which more correct pathological views have led practitioners to repudiate, and which, it cannot be doubted, were prejudicial. The discontinuance of general and local blood-letting, long-continued counter-irritation, mercurialization, low diet, confinement within doors, &c., must be regarded as constituting a highly important improvement in the management of this affection, of recent date, if, indeed, it be as yet so generally recognized as it should be.

"Making due allowance for these circumstances, it still seems to be the most rational conclusion that the use of this remedy is an important element in the treatment of tuberculosis. That it is adequate to effect complete recovery by any special curative virtue, is far from being established; but that it has a certain degree of remedial efficacy, whatever may be the mode in which it is exerted, is highly probable.

"These conclusions accord with the views of Dr. Gerhard, expressing the results of his experience in the employment of this remedy. This author, after proposing the inquiry: 'Does cod-liver oil ever cure pulmonary consumption, when it is decidedly advanced, and cavities exist in the lungs?' holds the following language: 'For my part, I must confess that I have never met with a case in which the physical signs, as well as the general symptoms, have entirely disappeared. Indeed, in most cases of the disease, we do not find that the physical signs diminish as decidedly as the general symptoms. Sometimes the cavernous respiration and the flat percussion actually increase, while the patient is gaining flesh, and his fever is considerably lessened. In these cases, however, the tuberculous deposit goes on, but the patient becomes less sensible to its effects in the general system, and, therefore, no longer emaciates, or even actually gains flesh, while the tubercular deposition continues. We are, therefore, obliged to conclude that cod-liver oil is not properly a specific against phthisis, and does not usually prevent the tuberculous deposit; it simply increases flesh, notwithstanding the disease, and sometimes may indirectly bring about a permanent cure in cases in which the tuberculous tendency has been ameliorated, and is therefore readily removed. My own impression is, that cod-liver oil will be more certainly useful in those cases in which patients are indirectly disposed to consumption, and have inherited a strong tendency to it, although it is not yet developed. I would recommend the use of the remedy in these cases, especially when the patient is thin or slightly emaciated; and I would direct it to be taken as an article of food, rather than of medicine, for a long time.'

"The writer of this report would add that, after an opportunity of observing the apparent effects of this remedy in numerous cases of tuberculosis, the conclusions at which he had arrived are essentially similar to those contained in the foregoing extract.

"The *Transactions of the Medical Association of Alabama*, a copy of which has been received since the foregoing was written, contains an article by Dr. William H. Anderson, of Mobile, submitting clinical facts relative to the value of cod-liver oil in tuberculosis and various other affections, which constitute important additions to the observations already presented. The following is a digest of the facts appertaining to phthisis: In *one hundred and twenty-seven* cases, no other remedy was used. Of these cases, *sixty* were in the incipient stage, the symptoms and signs consisting in prolonged expiration, dulness under one or both clavicles, slight cough, very little expectoration; and in *eighteen*, spitting of blood in small quantities, and to a greater extent in *four* cases. *Forty-one* were descendants of phthisical parents; *thirty-eight* had been temperate and well nourished; while *twenty-two* had been badly fed, badly clothed, and without any regular homes. In the remaining *sixty-seven* cases, the disease had advanced to the stage of excavation. The physical signs of cavities, of greater

or less size, existed. Excluding the cases which proved fatal shortly after admission, *thirty-seven* cases were treated solely with cod-liver oil, for a period of three months, with the following results: Of the *sixty* cases in the incipient stage, there was an evident amelioration in *fourty-four;* but in no single instance did the dulness leave the affected region. The amelioration was most evident in those who were of the sanguine lymphatic temperament.' The writer adds: 'We cannot say, then, that any one patient was cured; but that the general condition was improved, there can be no doubt.'

"Of *fifteen* cases in which small cavities existed, *thirteen* improved under treatment; and *nine* improved enough to consider the disease for the time stayed. *Two* of the fifteen who were not improved had an intolerance of the oil, and took it only in small quantities. Of the *twenty-two* patients who had large cavities, there was manifest improvement in *eleven.* This improvement consisted in increase of flesh, arrest of diarrhœa, alleviation of the cough, and relief of the laryngitis. The *eleven* were but little affected by the remedy.

"Dr. Anderson states that, 'after three months, the chance of death or recovery amounted to about the same as when they entered.' The greatest quantity taken amounted to three-fourths of a pint per day. The average dose was about one ounce three times daily.

"These observations were made in hospitals and dispensaries. No further statement than this is made with respect to the condition of the patients."

The general summary of the reporter, in reference to the therapeutics of typhoid fever, drawn from the communications of American practitioners, published during the preceding twelve months, is as follows:—

"The foregoing contributions, evidently by practitioners of intelligence and experience, exhibit, in some points, a striking agreement, and in a few important particulars, discrepancy of views. In each, much stress is laid on sanitary as distinguished from therapeutical measures. Depletion, in all, is considered injudicious, and the free use of cathartics, save at the incipient stage of the disease. They agree in placing high value on the liberal use of opiates. Mercurialization is disapproved of in the first paper; it is advised in the second, to relieve pneumonic complications; and in the third, to prevent their occurrence. In neither is it recommended for the disease *per se.* The chief points of disparity relate to stimulants and alimentation. Dr. Sutton restricts his patients to rice-water and gruel until convalescence; while Dr. Byford and Dr. Little esteem it a matter of great consequence to resort to more nutritious aliment early, and to make this a prominent part of the management. The two former rarely employ diffusible stimulants, and the last-named writer does not appear to lay much stress on this measure.

"The attention of the profession, as is well known, has been of late years specially called, by Dr. Graves, of Dublin, Dr. Gerhard, of Philadelphia, and others, to the importance of alimentation in fever; and also by various writers to the advantages of a free use of stimulants. The personal observations of the writer of this report have led him to think that, in these respects, the management of the disease has been greatly improved. His observations, however, like those of the writers just mentioned, have been mostly made in hospital practice. In view of the moderate rate of mortality in the cases reported by Dr. Sutton, in which an opposite course was pursued, two questions are suggested, viz.: 1. May not the importance of stimulants and alimentation be over-estimated by those who rank these among the first elements of the treatment of fever? 2. May not the principles of treatment in these, as well as in other respects, be subject to material modifications in their application, on the one hand, to patients of the poorer classes of society, in large cities, and the inmates of public institutions; and, on the other hand, to those occupying higher positions in the social scale, and to the population of a rural district? A third question may be added, viz.: May not this disease, as it occurs in a southern latitude, and in a different topographical situation, present in these, and other particulars relating to its management, different, and, perhaps, quite opposite therapeutical indications?

"The committee will content themselves with propounding these questions. To discuss them, would be a step beyond the proper limits of this report; and, moreover, the questions are of a character to call for the contribution of new facts, rather than present discussion.

"In a letter received from Dr. Rufus Haymond, of Brookville, Indiana, a member of the committee, he states that, in the treatment of typhoid fever, as it prevails in the section of country in which he resides, the reliance, in the latter stages, is mainly on the *terebinthinates*, of which the oil of turpentine is to be preferred."

In proceeding to consider the history of the epidemics that have prevailed in the United States, the report offers some very judicious remarks on the investigation of these wide-spread affections, in order to trace causes, determine laws, and to endeavour to deduce practical results proportionate to the amount of information collected, followed by a few general hints as to the means best adapted to the profitable study of epidemic diseases in this point of view.

Epidemic cholera is referred to, as having prevailed to a considerable extent within the limits of the United States, during the year 1850; its progress, as heretofore, being attended by a large fatality. Its ravages were chiefly confined to places situated on or near the Mississippi and Ohio rivers, the north-western lakes, more especially to the two former, and to California. In the States situated on the Atlantic coast, and between the latter and the Alleghany mountains, it does not appear that the disease has prevailed as an epidemic.

The interesting history of the progress of the epidemic contained in Dr. Flint's report, presents no facts calculated to throw additional light upon the etiology of the disease.

The notices given of epidemic dysentery, typhoid and typhus fevers, rubeola, scarlatina, and variola, are brief and imperfect, owing to the want of authentic materials within reach of the committee. Two communications in reference to the prevalence of epidemic erysipelas, in Indiana and Iowa, were received by the committee, from Drs. Mathews and Henry. They present no points of particular interest.

A more extended account is presented of a peculiar epidemic, which prevailed in many parts of the Southern States, during the summer of 1850. The disease is generally known as the *Dengue*, a name of unclassical and somewhat uncertain derivation.

"In common parlance it was frequently called the '*break-bone fever*,' sometimes '*neuralgic fever*.' Drs. Cocke and Copland apply to an epidemic affection, supposed to be analogous, the title of '*scarlatina rheumatica*,' an appellation less significant than the more homely names before mentioned, and certainly not more appropriate, inasmuch as the disease does not appear to have any essential relations either with scarlatina or rheumatism.

"This epidemic is rare in its occurrence, as well as singular in its characters. In 1827–8, it prevailed extensively in the West India Islands, and thence extended over the same portions of the United States which it has recently visited. Its progress, history, &c., at that time, formed the subject of an able memoir by Prof. S. H. Dickson, of Charleston, South Carolina, in *Bell's Medical Library* for 1839. Since its former appearance in 1828, no analogous epidemic disease has prevailed, to much extent, until the past summer. An affection, presenting characters strikingly similar, prevailed in Philadelphia in the summer and autumn of 1780, and was described by Dr. Rush. It was then commonly known as the '*break-bone fever*.' Other epidemics, supposed to be identical, have occasionally occurred in other parts of the world.

"The disease is characterized by an invasion, in some instances sudden, but in other cases after the usual prodromes of a febrile attack; the occurrence of

a chill in a certain proportion of cases, not invariably; anorexia, and usually, nausea and vomiting; febrile movement, more or less intense, occasionally not prominent; acute pains in the head, eyes, muscles of the neck, loins, and extremities, these being severe and prominent traits of the disease. The symptoms continue for a period, varying from a few hours to several days, when, in the large majority of cases, an eruption becomes developed, which, so far from being uniform in its physical characters, presents great diversities, among which are represented a large share of the *cutanei*. Hemorrhages from the nose, mouth, bowels, and uterus are apt to occur. The eruption generally follows the cessation of the febrile movement, and the patient shortly begins to convalesce. The stage of convalescence is frequently protracted and tedious. The disease is followed by a disproportionate prostration of the muscular strength; and the recovery of the appetite, strength, &c., is slow.

"The termination is uniformly in recovery. The disease has been known to prove directly fatal in scarcely a single instance.

"Active treatment seems not to be required, and the measures which are indicated vary, in different cases, according to the diversity of the symptoms presented.

"This is a brief physiognomical sketch of this remarkable epidemic. The committee are of opinion that a disease so infrequent in its occurrence, so peculiar in its historical features, and of so much interest in its pathological and etiological relations, merits a more full account than would be appropriate in this report, in the case of an epidemic whose symptomology is better known from having been oftener observed and described. Inasmuch as the past year has been signalized by the occurrence of this epidemic, there seems to be a propriety in making the Transactions a repository for a descriptive history, to which reference may be made should the disease recur, or should any person be desirous, at any time, to review the events which belong to it. The materials for an historical abstract are chiefly contained in three able memoirs on the subject, as follows: 1. '*A History of the Epidemic Dengue, as it prevailed at Charleston, in the summer of* 1850,' by Prof. S. H. Dickson. [*Charleston Med. Journ.*, Nov. 1850.] Prof. Dickson's name is especially identified with this disease, from his having been the historian of its former visitation in 1828, and he has contributed more largely to what is known respecting it than any other writer. 2. '*History of the Break-bone Fever, an Epidemic which prevailed at Charleston, in the summer of* 1850,' by Wm. T. Wragg, M. D. [*Charleston Med. Journ.*, Jan. 1851.] This memoir, ably drawn up, and evidently written by a careful observer, was read before the Medical Society of South Carolina, Dec. 9, 1850, on leaving the presidential chair. 3. '*History and Treatment of the Dengue Fever, prevailing in Augusta, in the year* 1850,' by Henry F. Campbell, M. D., &c. [*South. Med. and Surg. Journ.*, Jan. 1851.] The last is also a paper prepared with care and ability. In addition to these papers, Dr. Fenner, of New Orleans, has contributed reliable observations, which are contained in his communication accompanying this report, and several brief articles have appeared in different medical journals.

"Entertaining the views that have been expressed, the committee proceed to state the more important circumstances derived from the above sources, and present, as a supplement to the report, a condensed account of all the *facts* appertaining to the disease which are contained in the several papers referred to.

"In so far as accounts of the disease in different quarters have been contributed, there appears to be great uniformity, not only in its phenomena, but in its progress, duration, &c. It seems to prevail especially in cities; yet there is a striking exception to this in the report from New Iberia, La. Other exceptions may have existed of which there have been no reports.

"Long continued dry and hot weather preceded the development of the epidemic in all the places in which it has been described. The disease, too, is almost peculiar to a southern climate. These circumstances are involved, directly or indirectly, in its production.

"Respecting its pathology, beyond the statement of its being a species of essential fever, the committee do not feel prepared to offer any remarks; nor can they assume to say whether it is to be regarded as an affection properly

entitled to a distinct, local habitation and name in nosology, or whether it is a more common disease, presented with uncommon characters. The latter is a question which would be more properly discussed by those prepared by clinical study of the epidemic, and who are, at the same time, familiar with the diseases of the South.

"The subject of contagion is one of interest and importance. Prof. Dickson maintains that the disease is contagious, and says he supposes that to be generally admitted. Dr. Wragg entertains an opposite opinion, and adduces several considerations in support of his belief of its non-contagiousness. These are:—

"1. Its rapid and almost simultaneous diffusion, precluding the idea of personal communication.

"2. The very limited extent to which it prevailed in the vicinity of Charleston, and the absence of evidences of its having been transported into the interior, although the city was thronged with persons from all parts of the neighbouring country, on business. He mentions in this connection several instances which had come to his knowledge, in which, after the greatest possible exposure, the disease was not developed.

"3. The incredibly short period of incubation, on the supposition of a contagious miasm having been imbibed.

"To these considerations might be added another of considerable weight, viz.: the short and uniform career of the epidemic in the places in which it prevailed, and its entire as well as speedy disappearance. A disease propagated by contagion, it would be supposed, should linger longer, and not be so soon and completely extinguished. Moreover, its apparent connection with climate, season, and certain unusual conditions of the atmosphere, as respects heat and moisture, would seem to militate against its diffusion by means of contagion.

"The similarity of the facts bearing on the question of contagion, with those which obtain in epidemic cholera, will not fail to suggest itself. And, in this disease, as in epidemic cholera, it would seem as if certain facts favoured the supposition of, at least, its *portableness*. In the very interesting description of the affection as it prevailed in New Iberia, La., it is stated, that 'the first case originated in a gentleman, who came from New Orleans, and was taken sick a short time after his arrival;' but, the writer continues, 'there was no connection between the first and second cases, the subject of the first being a stranger; no one but his medical attendant visited him.' 'Again,' he adds, 'persons from the country, who visited our village, and remained any length of time on business, or to nurse the sick, took the disease on their return home; but in no instance did it spread among the other members of the family.

"Whilst analogy and the burthen of facts seem to be opposed to the contagiousness of dengue, it does not appear conclusively settled, that the development of the disease may not have, in certain instances, some connection with the existence of previous cases."

As appendices to this report, are presented "*An Account of Cholera as it appeared in Cincinnati, during the year* 1850," by Geo. Mendenhall, M.D.; "*Report on the Fevers, &c., of New Orleans,*" by E. D. Fenner, M.D.; "*A Descriptive Account of the Epidemic Fever called Dengue, as it prevailed at Charleston, South Carolina, and Augusta, Georgia, during the summer of* 1850," embracing all the important facts contained in the reports of Drs. Dickson, Wragg, and Campbell; and finally, "*A Brief Account of an Epidemic Fever which prevailed in the County of Alleghany, New York, and its vicinity,*" communicated in a letter to the Chairman of the Committee by Dr. R. P. Stevens. D. F. C.

The Report of the Committee on Surgery was presented by Dr. Paul F. Eve. The most important items contained in it, are the tables of Operations performed, and of Compound Fractures occurring, in the New York Hospital, and a statistical statement of all the known operations of Ova-

riotomy from 1701 to 1851. The first has been prepared by Frederick D. Lente, M. D., Resident Surgeon at the Hospital; the second has been compiled by Washington L. Atlee, M. D., of Philadelphia. In addition to these contributions, is a record of six cases of œdematous Laryngitis, successfully treated by scarifications of the epiglottis and aryteno-epiglottic folds, drawn up by Dr. Gurdon Buck, Surgeon to the New York Hospital; and likewise a number of more or less curious and interesting cases in Surgery, and of plans of treatment of different surgical affections, extracted from the medical journals of this country or obtained from private sources.

The Committee takes occasion to "express an undiminished confidence in anæsthetic agents, and a grateful admiration of the blessings they have conferred on mankind." And, we presume, that even those who were at first most opposed to the employment of these agents, and most skeptical as to their importance, are now willing to admit that a sufficiency of evidence has been accumulated during the past five years to warrant the belief that, when judiciously used, they are, in the vast majority of instances, not productive of immediate injury, or of danger to life. But, apart from the absence of pain attending the performance of operations during the anæsthetic state, have we reason to believe that the result of these operations is more or less favourable than when this condition has not been induced? This is, after all, the question of chief importance, and it is this which the surgeon should endeavour to determine. It is very desirable to prevent and assuage human suffering during surgical operations, and to be able to remove the dread which every one must experience, without some anæsthetic aid, at the anticipation of undergoing such ordeals. It is, moreover, very gratifying to the operator and to the spectators that the patient lies a tranquil, passive subject, instead of struggling and perhaps uttering piteous cries and moans, while the knife is at work; and this facilitates, undoubtedly, in many instances, the performance of the operation. But the operation itself is, under the vast majority of circumstances, a comparatively small part of the treatment, and should be so considered. And the surgeon who thinks only or chiefly of the state of the patient during this act, who is most desirous that there shall be no pain, no struggling—nothing, in short, to render the operation unpleasant to patient and friends, and troublesome to himself—is sadly wanting in his duty to all and to his profession. It becomes us, therefore, to ascertain, so far as we have the means, what is the ulterior effect of Anæsthesia upon the result of surgical operations; and until this problem is decided in its favour, we cannot think that any committee acts with good taste, or displays sound judgment, in reflecting in terms of disapprobation upon those surgeons who may have refrained from using anæsthetic agents. We do not see, in the whole Report, that the Committee has made any attempt to determine this question in the only way in which a legitimate conclusion can be arrived at—by careful comparative investigations. There are assertions and surmises, but not a single proof advanced, not a comparison instituted. Lightened by the ethereal vapours which the Committee so warmly extol, the Reporter seems, for the moment, to have been wafted into a region of placid sunshine, above the din and turmoil of conflicting facts which roll and thunder at his feet.

We are not an opponent of anæsthetics, with certain limitations. We most cordially agree with the Committee that they are often productive of much good; we acquiesce in the necessity of caution in their administration, which they recommend; and we thank them for correcting the erroneous, but commonly-received opinion, that there is little or no danger from the employment of sulphuric ether by inhalation. So far, we have no fault to find with the

Report, but we do object to the glowing panegyric pronounced by the Committee, (an official Committee, which professes to report to the National Medical Association the "Condition and Progress of Medical Knowledge in our country, during their term of service,") without any corresponding and adequate exhibition of facts to substantiate it. As a fair specimen of the amount and kind of argument displayed with respect to the value of Anæsthesia in Surgery, we quote the following sentences: "During the past year or fifteen months, we are much gratified in reporting three successful amputations at the hip-joint." (p. 269.) "It is difficult to obtain the exact number of times this very formidable operation has been performed in the United States, but the Committee believe the success of our surgeons with it has been as good as in other countries. They are pleased to notice the fact, that to anæsthetic agents is due a much greater proportion of recoveries after this amputation, than formerly. Not only was Anæsthesia induced in the above instances referred to, occurring during the year, but R. B. Wigstrom, Esq. of Lahore, E. Indies, and Dr. Restelli of the Sardinian army, report, within the same period, a like success under the same circumstances." (p. 270.) Here, it will be observed, there is no comparison of numerous cases; but the Committee select the three successful instances which happened in this country, and those which occurred in the practice of two surgeons abroad, and from these declare "the fact that to anæsthetic agents is due a much greater proportion of recoveries after this amputation, than formerly." *Apropos* of the eulogy upon Chloroform, quoted by the Committee from Mr. Skey's book on operative surgery, based upon the use of this agent in St. Bartholomew's Hospital, London, during which, in 9000 cases, "it has not left a stain upon its character as an innocuous agent of good;" we have just seen a letter from Mr. Paget, of the same hospital, addressed to Dr. Mütter, of this city, in which he says that two cases have recently occurred in that institution which prove to the officers that they cannot be too careful in the employment of chloroform, and that the most unfortunate results may most unexpectedly follow its use.

We hardly think that we are as yet in the possession of sufficient statistical information to permit us to form an accurate conclusion, as to whether the ulterior effects of anæsthetics upon patients who have undergone important operations are beneficial or prejudicial. But we propose examining this point, so far as the reports which we have received will enable us to do. We shall take, for this purpose, the statistics of Amputations of the large limbs, because they happen to be most accessible. We shall examine the two reports of Dr. Hayward, of the Massachusetts General Hospital, published in the *Boston Medical and Surgical Journal*, Oct. 2d, 1850, embracing a period of nineteen years; the two reports of the New York Hospital, the first published in the *American Journal of Medical Sciences*, July, 1848, the second in the volume of the *Transactions of the American Medical Association*, now under our notice, comprising an experience of twelve and a half years; finally, the reports from the Pennsylvania Hospital, by Dr. Norris, contained in the numbers of the *American Journal* for August 1838 and May 1840, involving a period of ten years, together with the result of the experience in this hospital from Jan. 1st, 1840, to Jan. 1st, 1852. The last-mentioned statistics will soon be published in the *American Journal;* but, by the kindness of Dr. Norris, we have been favoured with the result. We shall not be minute in specifying the nature of the cases for which amputation was done, because the reports extend over too great a number of years, and the cases themselves are too numerous, to require this.

In Dr. Hayward's first report, 67 patients were operated upon; of these,

15 died, or 1 in $4\frac{7}{15}$. Of 45 operations performed for chronic diseases of the limbs, death followed in 5 instances, or 1 in 9; of 22, for recent injuries, 10 were fatal, or 1 in $2\frac{1}{2}$. This was prior to the introduction of anæsthetics, by inhalation, into surgical practice.

By his second report, of 74 patients 17 died, or 1 in $4\frac{6}{17}$. The operation was performed on 40, for diseases of the limbs, of whom 5 died, or 1 in 8; on 34 for recent injuries, of whom 12 died, or 1 in $2\frac{5}{6}$. Of these 74, 52 inhaled some anæsthetic agent; chloroform in one instance, sulphuric ether or chloric ether in the others; and of the 52, 13 died, or 1 in 4; while of the 22 who were not anæstheticised 4 died, or 1 in $5\frac{1}{2}$. (By referring to Dr. Hayward's report, it will be seen that he has made a mistake in his enumeration of the number of persons who were subjected to the influence of anæsthetics, and also in the mortality amongst these patients. This error we have corrected.) Throwing together all in both reports who took no anæsthetic, we find that they numbered 89, of whom 19 died, or 1 in $4\frac{3}{19}$. Of the whole number of patients operated on, from both tables, for chronic diseases, without anæsthetics, 59 in number, 7 died, or 1 in $8\frac{3}{7}$; of the total of 26 operations for diseases, with anæsthesia, 3 died, or 1 in $8\frac{2}{3}$. Of the aggregate number of operations practised for injuries, without resort to anæsthetics, amounting to 30, 12 were fatal, or 1 in $2\frac{1}{2}$; of the 26 in which anæsthesia was induced, 10 died, or 1 in $2\frac{6}{10}$.

Thus far, then, the examination is rather adverse to the employment of anæsthetics in amputations.

In looking over the reports of the amputations in the New York Hospital, we find them amenable to two important objections, so far as concerns our present inquiry. In the first place, it is admitted, in both the reports, that from the imperfect manner in which the hospital books are kept, many cases have probably been unrecorded, or recorded in such a way as to render it difficult or impossible to ascertain, at any subsequent period, their true nature and results; and it is certainly not unfair to suppose that, without any intention whatever of preserving an incorrect record of hospital experience, cases which terminate speedily in death, without presenting any particularly interesting or noticeable phenomena, are in this manner accidentally omitted from the register and forgotten. Secondly, with reference to the employment of anæsthetics, the fact of their having been used is mentioned of only about two-thirds of the patients subjected to amputations; while one can hardly fail to feel convinced, by an examination of the tables, that it is altogether probable that these agents were made use of in many other cases. And moreover it is stated, at the commencement of the last report, "*in almost every case*, either chloroform or ether was employed; generally the former, until the occurrence of a fatal case from it in this hospital; afterwards the latter, from which we have never had any bad consequences, and which has never failed to prove effectual." (p. 315.)

According to the first New York Hospital report (*Amer. Journ. Med. Sci.*, July 1848, pp. 33–43), the number of patients operated on was 91, of whom 26 died, or 1 in $3\frac{1}{2}$. Of the 91 amputations, 36 were primary, for recent injuries, with 13 deaths; and 55 secondary, for older injuries, and for diseases of the limbs, with 13 deaths; or, for the former, 1 death in $2\frac{9}{13}$; and for the latter, 1 death in $4\frac{3}{13}$ operations. (It will be observed, that our enumeration of the number of deaths, after primary amputations, is three more than that of Dr. Buel, in his report, p. 39; but he has accidentally committed an error in his summing up.)

By the second New York report, published in the fourth volume of the Transactions, as already indicated, we find that 63 amputations of large limbs

were peformed; of this number, 28—instead of 25, as inadvertently stated at p. 322—proved fatal, or 1 in 2¼. Of the aggregate number of operations, 40 were for injuries, but not always performed within twenty-four hours from the occurrence of the accident; indeed, in many instances delayed so long as from five to thirty-seven days. This delay, although proving the exceedingly laudable anxiety of the surgeons of the hospital to save the limbs of their patients, rather than to reap the not always, unfortunately, barren, yet, truly worthless glory of the professed amputator, has, of course, rendered the success of their operations less considerable, numerically speaking, than it would have been, perhaps, had they removed the injured limb at an earlier moment. (It would be very desirable to have at our command a sufficient number of well recorded cases of amputations upon large limbs, and their results, together with the date of the operation, from the time of reception of the injury, in every case, in order that an approximate conclusion might be arrived at, as to the comparative advantages and disadvantages to life and limb, resulting from delaying the operation. Perhaps the examination of the different reports now under consideration may be of value in such an inquiry.) Of the 40 amputations performed, as above stated, upon comparatively recently injured persons, 21 proved fatal, or 1 in 1$\frac{19}{21}$. Of the remaining 23 operations for long-standing injuries and diseases of the limbs, 7 were fatal, or 1 in 3¾ths.

Of the 63 patients operated upon, one is stated not to have been in the anæsthetic state; 41 are said to have been in this condition, and concerning the remaining 21 no mention is made of anæsthesia. Of the 41 who were under the influence of these agents 17 died, or 1 in 2$\frac{7}{17}$ths; of the 22 not reported as having been thus affected, 11 died, or 1 in 2. But, for the reasons before urged, this result is not absolutely reliable. And in this connection it may be well to quote from the report, at p. 323, some observations by the narrator. This gentleman is struck with the much more favourable result of the hospital amputations, as presented in the first report, compared with that exhibited in his own, the deaths in the former being 1 in 3½, in the latter, 1 in 2¼. And, after suggesting that this may be merely coincidental, and that, upon the same principle, "an unusual success may be looked for during the next two or three years," he remarks: "Anæsthetics came into general use about the period of the commencement of these statistics. May not the employment of these have had its influence upon the mortality? This is a very important question. We do not deny that it may have had some influence in augmenting the fatality of operations; but we have seen no reason to infer that it has, except, perhaps, the fact that *union by adhesion* seems to have been much less frequent since the introduction of anæsthetics into this hospital than before. Whether the two are in relation of cause and effect, it is, we fear, impossible to determine at present." We are glad to see that, as we should have anticipated, the distinguished surgeons of the New York Hospital have their attention directed to the solution of this important question; and we doubt not that, by patient observation and careful recording of all their cases, we shall, at some not very remote period, be enabled to form a more correct opinion in the premises than we can do, from the gratuitous assumption of the Report under review.

If, then, from the statistics thus far examined, we institute a comparison between the mortality from amputations without anæsthesia, and that with this condition, we have the following result; the whole number of amputations embraced in the Boston and New York reports, is 296, of which 86 proved fatal, or 1 in every 3$\frac{12}{43}$ds. Anæsthetics were employed in 93 of the patients, of whom 30 died, or 1 in 3$\frac{1}{10}$th; of the whole number of patients operated upon, 203 were not anæstheticised, and of these 56 died, or 1 in 3$\frac{47}{56}$ths.

We come now to the examination of the reports from the Pennsylvania Hospital.

The tables published, include the result of 80 amputations practised upon 79 patients; of these 22 died, or 1 in $3\frac{1}{2}\frac{3}{2}$ds. Of the operations, 35 were primary, performed within twenty-four hours of the receipt of the injury, and of this number 11 proved fatal, or 1 in $3\frac{2}{1}$ths: four of the deaths occurring within twenty-four hours after the operation. Twenty of the amputations were secondary, for accidental injuries; of these 7 proved fatal, or 1 in $2\frac{7}{2}$ths. Twenty-five—two having been practised upon one patient,—were for chronic affections, of which 4 were unsuccessful, or 1 in 6 of the patients died. (*Am. Journal, May*, 1840, p. 38.)

During the 10 years intervening between Jan. 1st, 1840, and Jan. 1st, 1850, 116 capital amputations were performed; of these, 25 were fatal, or 1 in $4\frac{6}{2}\frac{6}{5}$ths. Of the whole number of patients, 76 were operated on for recent injuries, within twenty-four hours of the occurrence of the accident, and of these 15 died, or 1 in $5\frac{1}{1}\frac{1}{5}$ths; 21 of the amputations were secondary, for accidental injuries, and of these 9 were fatal, or one in $2\frac{1}{3}$d; 19 were for the cure of chronic affections, of which only 1 was unsuccessful; 14 were at joints, with 1 death.

In 1850, the total number of capital amputations performed was 23, of which 3 were mortal, or 1 in $7\frac{2}{3}$ds. Only one of these was done for disease, and this was for spontaneous grangrene of the leg, which was fatal.

In 1851, the number of amputations was 11, all but 1 (which was successful,) for recent injuries; 2 of these proved fatal, or 1 in $5\frac{1}{2}$.

The aggregate of the amputations of large limbs performed during the last twenty-two years in the Pennsylvania Hospital amounts, then, to 230 upon 229 patients. The mortality among these was 52, or 1 in $4\frac{3}{2}\frac{1}{2}$ds.

If the total number of persons operated upon, as exhibited in all the reports thus examined, be taken, and also the aggregate of deaths among them, it will be found that there have been in all 524 subjects of capital amputations, with 138 deaths, or 1 death in $3\frac{2}{6}\frac{2}{8}$ths persons. Of this number 93 patients inhaled some anæsthetic agent, with 30 deaths, or 1 in $3\frac{1}{1}\frac{1}{0}$ths; 431 took no anæsthetic, and of this class 108 died, or 1 in $3\frac{1}{1}\frac{0}{0}\frac{7}{8}$ths, almost 1 in 4.

We present in the following tables the statistics which we have used, so as to exhibit the results in a more condensed form:—

AMPUTATIONS.	Boston.	N. York.	Philadelphia.	Total.	Proportion of deaths.
With anæsthetics,					
For injuries.—Total	26	23	0	49	
Cured	16	12	0	28	
Died	10	11	0	21	1 in $2\frac{1}{3}$
For diseases.—Total	26	18	0	44	
Cured	23	12	0	35	
Died	3	6	0	9	1 in $4\frac{8}{9}$
Without anæsthetics,					
For injuries.—Total	30	83	184	297	
Cured	18	53	138	209	
Died	12	30	46	88	1 in $3\frac{1}{3}\frac{7}{3}$
For diseases.—Total	59	31	45	135	
Cured	52	24	39	115	
Died	7	7	6	20	1 in $6\frac{3}{4}$

PROPORTION OF MORTALITY AFTER AMPUTATIONS IN EACH CITY.			
	Boston.	New York.	Philadelphia.
With anæsthetics,			
For injuries	1 in $2\frac{6}{10}$	1 in $2\frac{1}{11}$	0
For diseases	1 in $8\frac{2}{3}$	1 in 3	0
Without anæsthetics,			
For injuries	1 in $2\frac{1}{2}$	1 in $2\frac{3}{5}$	1 in 4
For diseases	1 in $8\frac{3}{7}$	1 in $4\frac{3}{7}$	1 in $7\frac{1}{2}$

GENERAL PROPORTION OF DEATHS TO CASES.			
	Total.	Injury.	Diseases.
Boston	1 in $4\frac{1}{3}\frac{3}{2}$	1 in $2\frac{6}{11}$	1 in $8\frac{1}{2}$
New York	1 in $2\frac{4}{7}\frac{7}{4}$	1 in $2\frac{3}{4}\frac{1}{1}$	1 in $3\frac{1}{3}\frac{9}{3}$
Philadelphia	1 in $4\frac{2}{5}\frac{1}{3}$	1 in 4	1 in $7\frac{1}{2}$

It may interest our readers to compare these results of amputation in the United States with those observed in Europe. In the *London Medical Gazette* of June 9th, 1838, Mr. Benjamin Phillips published a statement of the termination of amputations in France, Germany, and Great Britain. From France he reports 203 cases, with 47 deaths, or 1 in $4\frac{1}{4}\frac{3}{7}$ths; from Germany, 109 cases, with 26 deaths, or 1 in $4\frac{5}{2}\frac{}{6}$ths; from Great Britain 233 cases, with 53 deaths, or 1 in $4\frac{2}{5}\frac{1}{3}$ds. These are said to be taken both from hospital and private practice, and to have been carefully collected.

From these statistics, so far as they can be considered sufficient to admit of a reliable inference, we are to conclude that anæsthetic agents rather increase the mortality after amputations practised upon the large members.

We are aware that the conclusions deducible from the statistics collected by Dr. Simpson of Edinburgh (Anæsthesia in Surgery and Midwifery,) do not accord with those which flow from our own. But at the time of the publication of Dr. Simpson's book, the employment of anæsthetics had but just commenced: the volume was given to the public in the fall of 1848, and these agents were introduced into European practice not two years previously. Consequently, the number of cases reported in his table is small as compared with that of cases non-anæstheticised. It had not been sufficiently tested in the British hospitals, from which he derives his data. This is evident from the fact that from several of the large metropolitian hospitals, he is not furnished with a solitary case of some important and not unfrequent amputation, particularly of primary amputations. Thus, for example, no case of primary amputation of the thigh is reported from the large hospitals and infirmaries of Aberdeen, Birmingham, Bristol, Dublin, Liverpool, Manchester, Glasgow, nor from the King's College, St. George's, Middlesex, and Westminster Hospitals of London, nor from several other smaller institutions; neither do many of these same establishments furnish a single instance of primary amputation of the arm or leg. Indeed, of the 302 cases which he reports, 73 only are primary, and 229 secondary amputations. On the other hand he collates 618 cases of amputations performed in thirty British hospitals, for the few years preceding the employment of anæsthetics. Of these 230 are primary, and 388 second-

ary; a much larger proportion of primary cases, (which are the most unsuccessful, it will be remembered), than in the first series. The deaths among the patients who inhaled anæsthetics were 1 in $4\frac{6}{7}$ths; of those who did not inhale, 1 in $3\frac{3}{6}\frac{3}{7}$; the mortality in the amputations from injuries, was in the former 1 in $2\frac{2}{2}\frac{3}{7}$ths, for diseases 1 in $4\frac{4}{4}\frac{5}{6}$ths; in the latter, for amputations for injuries, 1 in $2\frac{3}{4}\frac{7}{7}$ths, for diseases, 1 in $4\frac{5}{6}\frac{5}{5}$ths. But this average contrasted with those obtained in Boston and Philadelphia, do not speak very loudly in favour of anæsthesia; indeed, in some particulars the comparison is very unfavourable to the use of anæsthetic agents.

We may remark here, as being pertinent to this investigation, that the numbers which we have analyzed are susceptible of having very different interpretations put upon them, according as they are viewed in the aggregate, or in smaller groups. And they offer a renewed proof, if any further evidence were necessary, that, in order to arrive at anything like a reliable conclusion concerning the propriety of anæsthesia in its ulterior and most important effects upon surgical practice, more evidence is necessary; reports, from various sources, of the true results of the employment of anæsthetics in numerous cases must be waited for.

It seems, so far as we can ascertain from various sources, that the *rage* for anæsthesia is becoming calmed. "The sober, second thoughts" of medical men are beginning to act, and to examine the question in a more philosophical spirit than it was possible to do at first. For amidst the storm of applause which burst from the doctor, the divine, the orator, the poet, as well as the patient, "the still, small voice" of reason could not be heard. It were indeed a heavenly boon to mankind to discover some agent whereby pain might be annihilated, at pleasure and without danger. And for a time it seemed that the boon had been bestowed. But the blessing is not unalloyed. One of the sources of danger, apart from those which may exist at the time of the use of the letheon, and just afterwards, has already been hinted at in the quotation which we made from Dr. Lente's report. It can hardly be supposed that so subtle an agent as ether or chloroform, can be introduced into the blood without decidedly modifying its constitution in some way. Other observers have formed the same opinion which Dr. Lente seems to be inclined to adopt, concerning the effect of these agents in many instances. In a paper published in the last number of this Journal (January 1852), Dr. Porter, of the army, expresses the conviction that, in the cases in which he saw them employed during the late war with Mexico, they exercised a decidedly unfavourable influence upon the state of wounds, and upon the result of operations. And, as it has a direct bearing upon the subject of Anæsthesia, though not in particular connexion with surgery, we will quote from the last edition of Ramsbotham's *Obstetric Medicine and Surgery*, just published in London, the following sentences: "I unhesitatingly declare my conviction that the treatment (by Anæsthesia,) is fraught with extreme danger; and that it will at no very distant time, unless, perhaps, in some exceptional cases, be banished from the practice of the judicious obstetric physician." (p. 154.) The author then enters fully into the examination of its dangers.

The statistical tables of other operations furnished by Dr. Lente are very interesting, and constitute valuable additions to this department of surgery. It is to be regretted that hitherto so little attention has been bestowed upon the compilation of statistics in surgical practice; if we possessed a larger amount of positive knowledge, thus derived, as to the result of all operations, exclusive of those properly belonging to minor surgery, we are persuaded that the *lust* for operating, now so common, would be much lessened, and that the public would be thereby a gainer.

Twenty-nine operations are reported as having been performed upon large arteries, viz.: for *Popliteal Aneurism* 9; by *ligature* of the femoral artery in 8 cases, of which 6 were cured (in one of which pressure had been previously tried in vain) and 1 died; and by *compression* in 1 case, which was successful; for *Femoral Aneurism* 7; by *ligature* of the *femoral* artery in 3 of the patients, of whom 1 died, the thigh having been amputated subsequently to the ligature of the artery; by *compression* of the femoral in 2 cases, both of which were cured; by *ligature* of the *common iliac* in 1, in which death followed upon the same day, from exhaustion, it is stated; and of the *external iliac* in 1, which also proved fatal, upon the eleventh day, from gangrene. The *common carotid* was tied twice; once for an encephaloid tumour in the diploe of the skull, unsuccessfully, and once for a wound of the throat, successfully. The *common and internal carotids* were tied in one case, successfully, for a traumatic aneurism. *The carotid* (we presume the *external*), four times for aneurism; one of the patients died (from phlebitis), the other three recovered. The *femoral* was secured once for a compound fracture of the thigh, which was subsequently successfully amputated; once for hemorrhage from a stump, with success; the *femoral and external iliac*, successively, once for a compound fracture of the thigh, with hemorrhage from the stump after amputation, unsuccessfully. The *external iliac* once, for inguinal aneurism, with success. The *subclavian* once, without the scaleni muscles, for aneurism, successfully; and once within the scaleni, for subclavian aneurism, unsuccessfully from secondary hemorrhage on the fourteenth day.

Twenty-five patients were operated on for *strangulated hernia*, of whom 13 died. Of the cases, 3 were of *femoral*, 18 of *inguinal*, 2 of *congenital*, the seat not being stated, and in 2 no mention is made of the variety of hernia. Of the 3 *femoral herniæ*, 1 was fatal from gangrene, the others recovered; of the 18 *inguinal*, 5 died of peritonitis, 1 of gangrene, and in 2 the cause of death is not announced; of the *congenital*, both died of peritonitis; the two undescribed cases were both fatal, one of them from gangrene.

Twelve operations were performed for the removal of *stone in the bladder;* of these, two were fatal, both of them from peritonitis; in one, the lateral operation was instituted, in the other the kind of operation is not stated; the *bi-lateral* procedure was had in 3 of the successful cases, the *lateral* in 3, *lithontripsy* was performed in 1, and in 3 the modus operandi is not described. The patients were of different ages, from 4 to 62 years.

We are compelled to pass over unnoticed the tables of operations practised upon the small arteries, those for stricture of the urethra, for diseases of the bones, for hemorrhoids, the dislocations of the hip-joint, the extirpations of testicles, and the operations on the joints.

The report from the hospital concludes with a table of 158 *cases of compound fractures of the thigh and leg.* This table we have not now leisure to analyze; but we doubt not that it is an important contribution, and that it will be made use of in future investigations.

Appended to the Report of the Committee is "a table of all the known operations of Ovariotomy from 1701 to 1851, comprising 222 cases, and giving a synoptical history of each case, by Washington L. Atlee, M. D." This is the largest number of cases of this formidable operation which has ever been published, and reflects credit upon the industry of Dr. Atlee. This statement merits a careful examination, with reference to the original sources of information quoted from. But this we shall be unable to do. We shall only attempt a revision of the table as presented to us, comparing it, when this is possible, with the recent very full statement by Dr. Lee, of this operation as performed

in Great Britain, in 162 cases, published in the *Medico-Chirurgical Transactions*, vol. 34, 1851.

It cannot be expected that Dr. Atlee's table shall be complete in all desirable points, because the original publications concerning many of them were, of course, deficient in completeness. Hence the report, for the purposes of study and as a groundwork for analytical reasoning, is defective in many of those particulars in which it were most desirable to have positive and numerous details. Thus, besides the 6 cases in which it is positively stated that there was no tumour present, there are many others, 72 in number, in which it is not mentioned whether there was any tumour or not; and in most of these, again, so far as the table goes, we are just as much at liberty to believe that there was none at all, as that any existed. We make these observations not to impugn the statements of the table, nor to question the accuracy of the inferences which Dr. Atlee draws from them, but simply as a criticism on the manner in which the table is drawn up. And in consequence of these imperfections we cannot review and verify many of the deductions ourselves, but must take for granted that the compiler's inferences are correct.

The whole number of cases recorded is 222, of which 76 died, and 146 recovered. The causes of death are stated with reference to 49 cases; they were, in general, inflammation of the peritoneum, intestines, veins, or of some other structure or organ; hemorrhage; shock of the operation, &c. Of the 222 cases, 52 were of the minor section, with 13 deaths; 153 of the major, with 58 deaths; 17 unknown, with 5 deaths. Of the total number 57 were not completed, with 12 deaths. The reasons why the operation was not completed in these cases were as follows: the existence of firm adhesions in 38; of tumour of the uterus in 2; of enlarged uterus in 3, in two of which Dr. Atlee was himself the operator; of enlarged uterus together with ovarian tumour in 1 (Dr. Atlee's case); in 1 the ovaries were unimplicated, but a fibrous tumour was connected by a narrow fold of peritoneum to the fundus of the uterus, which was itself atrophied; and in 12 no cause is assigned. In 6 cases no tumour was found; two of the patients died from the operation. Of the whole number of patients operated upon, 1 in every $2\frac{3}{5}\frac{5}{6}$ died.

The table of Dr. Lee, in the 34th vol. of the *Medico-Chirurgical Transactions*, embraces, as we have stated, the analysis of 162 cases of Ovariotomy performed in Great Britain. Many of the cases herein presented are not found in Dr. Atlee's report; and, on the other hand, some of those recorded by the latter are not included in Dr. Lee's paper. Of the 162 patients, 51 probably died from the operation; in 60, the ovarian disease could not be removed:—19 of these operations proved fatal. Of the remaining 102 cases, in which the operation was completed, 42 terminated fatally. Dr. Lee says that, from an analysis of 108 cases which are fully detailed, "in about one-third of the number, before an opening had been made into the sac of the peritoneum, it was impossible to determine whether any ovarian disease actually existed; or whether, when ovarian cysts and tumours were present, it was possible to extirpate them by a surgical operation." (p. 13.)

We regret that our time will not permit us to make a more critical examination of these two important papers in connection with each other, and with reference to the original sources whence the cases which they embody are drawn. The difficulties attending the diagnosis seem to be insuperable; and the obstacles to the removal of the ovarian disease, when such actually exists, are evidently insurmountable, in very many cases. It is certainly a matter of great surprise that so many survive the operation. And this fact—that so many do recover—is urged by those who recommend and perform the operation, as placing it upon a par with the ligature of large arteries, amputation,

&c. But the cases are by no means parallel; for the latter operations are done, usually, to save life, in circumstances when this is in more or less imminent danger, while in favour of Ovariotomy no such plea can be advanced.

We are not aware that sufficient attention has been devoted to the natural result of ovarian disease, to permit an assertion as to its comparative fatality, when contrasted with that of ovariotomy. Certainly, many cases are recorded in which a spontaneous cure took place. And, be it remembered, that in many of the operations published, though death did not immediately or speedily follow, yet this event did take place at no very remote period, and as a result of the operation, or of the disease for which this was executed.

We here take our leave of the Report of the Committee on Surgery. The papers appended to it, from Dr. Buck, Dr. Lente, and Dr. Atlee, are, as we have already observed, valuable contributions to Surgery. But, apart from these, we do not think that the Report is calculated to convey a correct impression of the existing condition of American Surgery, or of its progress during the past twelve months. However, we by no means wish to censure for this the members of the Committee; on the contrary, we would rather regret that their labours have not been more commonly shared and lightened by the practitioners of our broad country, who, had they taken the trouble to contribute the important results of their experience, would have enabled the Committee to embody a vast amount of valuable information, at once more instructive to individuals and more creditable to the National Medical Association. F. W. S.

The *Report of the Committee on Obstetrics* is from the pen of Dr. D. Humphreys Storer, of Boston. It presents an excellent and very judicious notice of the several contributions made by the physicians of the United States to this department of medicine during the period over which the report extends. In many instances the name of the contribution, that of its author, and the journal in which it is contained, is alone given; in general, however, a short but well digested synopsis of the more interesting facts, embraced in the obstetrical communications of the period referred to, is presented.

The summary of the reporter in reference to the present state of opinion and experience in relation to the abortive powers of ergot is interesting, and should have all its influence upon the minds of practitioners. We confess that so far as our own observations extend, and accident has made us personally familiar with several instances in which the ergot was resorted to, and taken in large and repeated doses, for inducing abortion, but without the slightest effect, we are inclined to the opinion of the French commission, that the ergot has not "the power of influencing uterine contractions before the full period, unless they have been previously excited by some other means." In the cases to which we have reference, as falling under our own notice, there could be no reasonable doubt as to the activity of some portions, at least, of the ergot employed; it having been procured at different periods, at different shops, and at various intervals.

The summary of American experience in reference to the subject of premature delivery, and the best means of effecting it, is both interesting and important. We are persuaded that, in all cases in which the pelvis of a female is so far contracted as to render delivery at the full period difficult or impossible, without the destruction of the child and danger to the life of the mother, it is our duty to recommend a recourse to measures calculated to effect a premature expulsion of the child. This, it has been clearly shown, may be done with little, if any, risk to the female; and in many cases, may be the means of saving also the life of the infant.

Some interesting cases of extra-uterine fœtation are given, as well as a series of observations, illustrative of some of the circumstances under which uterine hemorrhage may occur subsequent to delivery, and of its treatment. The following remarks of Dr. Storer fully accord with our own experience.

"In speaking of hemorrhage after the extraction of the placenta, Dr. Haxall refers to the various remedies usually prescribed in these cases, and says, 'Nor should the administration of ergot be omitted.' Speaking thus cursorily, as if he did not consider it of primary importance. In cases such as Dr. Haxall has described, we consider it imperative upon the practitioner to exhibit ergot the moment hemorrhage appears. In quite a number of instances which have fallen under our notice, the hemorrhage has diminished as soon as the specific effects of the remedy have been apparent. And, in two cases, occurring in the practice of the chairman of your committee, where, after previous labours, the hemorrhage had been profuse and alarming, by exhibiting the remedy just previous to the exit of the child's head, the anticipated hemorrhage was almost prevented."

Under the head of obstetrical instruments, a very fair notice is presented of the several improvements suggested by American physicians, within the period to which the report is limited.

Dr. Evans' "Obstetrical Extractor" is referred to, and seven additional cases are given in which its inventor has used the instrument; in these he remarks: "Its success has not only confirmed my confidence in the utility of the instrument; but also in its superiority over the forceps and all other means of applying extractive force in parturition that have heretofore been employed."

In reference to the Extractor, the reporter remarks as follows:—

"We confess that the only cases in which it seems to us that this instrument might be advantageously applied, are those in which labour has been prolonged from a *deficiency of uterine action;* but, even here, it presents less prospect of relief than the forceps, from the fact that much is often gained by the compression of the parietal bones, and their overlapping upon the application of the latter instrument, which would not be gained by the circular pressure produced by the extractor."

"Although," adds Dr. Storer, "every practitioner must acknowledge that cases do occasionally occur where manual assistance is imperatively demanded; yet we believe such cases are exceedingly rare. Most religiously do we coincide with the admonition of Churchill, 'That, *in no case is the forceps* (or indeed, any instrument) *to be applied, until we are perfectly satisfied that the obstacle cannot be overcome by the natural powers, with safety to the mother and child.*'

"Decided as have ever been our convictions upon the subject, they have gained additional strength by a perusal of the *Life, Writings, and Private Practice of the late Dr. Joseph Clark, of Dublin,* one of the most distinguished accoucheurs of the present age; who in a practice of forty-five years, attended *three thousand eight hundred and seventy-eight births,* in which the *forceps* were used but *once,* the *lever once,* and *craniotomy* was performed *twelve times;* and not a single death occurred from laborious or protracted labour."

Such statements cannot be too often repeated, or too widely spread among the profession. The temptation to bring a tedious labour to a close by manual interference, is too strong to be resisted by the young and inexperienced obstetrician, unless he is constantly forewarned of the danger and non-necessity of such interference, in any case in which nature is fully able to effect delivery without danger to the mother or child. The practice, which we have heard advocated by "persons of eminence in the profession," of resorting to instrumental delivery to save the mother a few hours of anxiety and suffering, cannot be too severely reprobated.

The report concludes with an account of operations suggested and per-

formed in cases of lacerated perineum, prolapsus uteri, chronic mammary tumour, fibrous tumour in the substance of the uterus; for the removal of diseased ovaries, and for the relief of occluded vagina; and cases in which the Cæsarean section has been practiced, during the year 1850, by American practitioners; and some contributions towards obstetrical statistics.

The report on *Medical Education*, from the pen of Dr. Worthington Hooker, of Connecticut, is marked by good sense and presents a candid, dispassionate examination of the defects and abuses in the existing modes of conducting medical education, and of the measures best adapted for their removal, and for elevating the attainments of the members of the profession within the United States to their proper standard. The necessity of due attention to the preliminary education of those destined to enter upon the study of medicine is insisted upon. The laxness of practice which prevails in regard to this subject, being very justly esteemed by the reporter as one of the greatest obstacles in the way of that reform, the promotion of which is one of the leading objects of the National Association. He urges, therefore, as of the utmost importance, that the action of the Association on this subject be fully sustained, and that its recommendations be carried into effect as rapidly as the various conditions of the different portions of our country will permit.

The reporter is a clear-headed, practical man, who comes to the task of investigating the defects and abuses of medical education in this country, unbiased by any particular party, and representing no other interest than that of his profession, and of the public at large; to the safety of which a body of talented and well instructed physicians materially contribute, not only by their services in the hour of sickness and of peril, but also by their careful investigation of the causes of disease, and the measures adapted for their prevention or removal; or, when this latter cannot be effected, by pointing out the means by which the influence of these morbific causes may be rendered less pernicious.

To effect the desired reform in medical education, much stress has been laid, by different minds, upon different measures which have been proposed, and the merits of each have been earnestly urged by its advocates. Dr. Hooker, however, remarks, that

"A candid view of the subject as a whole, we think, will show that there is no one measure, or set of measures, that can raise the standard of medical education, but that this must be done by an extensive and varied combination of measures."

While he admits that great changes are required, in order to remove all the existing defects and abuses, he insists that they must be, for the most part, gradually introduced.

"Any precipitate movements," he remarks, "will be disastrous. Let there be the utmost freedom of suggestion and discussion, to prepare the way for one change after another; but let no movement be made which cannot be sustained by the public sentiment of the profession. Dissatisfaction is sometimes expressed when there are no positive marks of advance in the action of this Association. But it should be remembered that there is a real advance continually resulting from the very agitation of the subjects which are discussed, and that any positive acts on our part are not so much causes, as they are evidences of such advance. The impatient reformer must wait a little, and he will see that the many minds which are thinking and speaking, not only here, but in the multitude of subordinate associations, and smaller accidental circles throughout our land, are not thinking and speaking in vain. The results in due time will appear."

The remarks of Dr. Hooker, on every point in relation to the subject of

medical education, and the measures necessary for its reform, are so very pertinent and practical, that were we to follow out our own inclinations, we should insert the whole report. We regret that the recommendation of the Association to the several State Medical Societies throughout the Union, to procure a republication of this report for general distribution among the profession, has not been more generally acted upon.

In regard to the manner in which most students of medicine are educated in this country, the reporter remarks as follows:—

"Eight months in the year they *read* medicine, as it is termed, in some physician's office, and the remaining four months they hear from four to seven lectures daily, at the same time attending upon the practice of an hospital, if there be one in connection with the school; and practising dissection, if they incline to do it. As most physicians are not accustomed to teach, a very large proportion of students simply read medicine under the direction of their preceptors, and so far from being the subjects of any rigid training in their studies, they are merely told what books to read; and their inquiries are answered whenever they chance to make any. And when they come to attend lectures, there is nothing like recitation, or, if there be an examination of the students on each previous lecture, so little time is given to the exercise that it is of little value. The student, then, neither while attending lectures, nor while in his preceptor's office, is encouraged in anything like faithful and rigid study. Besides, there is no proper gradation in the instruction which he receives. There is no due preparation in the study of one department for the study of another; but all is acquired in a very loose and confused manner. This state of things, it is true, is obviated, in a measure, by the private schools for teaching medicine, which are in operation in our cities. But comparatively few, however, avail themselves of the benefits of these schools, and most students are trained in the very lax mode in which we have indicated.

"In the study of every science, an active reception of knowledge should be encouraged in preference to a passive reception of it. But, in the study of medicine, as generally pursued, the latter is encouraged in preference to the former. The mode of study during eight months of the year, ordinarily invites to a listless and careless state of mind; and in the four remaining months, the student's mind is subjected to such a crowd and pressure of instruction that its powers are wearied out, and almost paralyzed. The memory is taxed to the utmost, and there is little time for the exercise of the reflecting and reasoning powers. Such a mass of ill digested knowledge, of course, in a short time produces satiety, and unfits the mind for anything like active exertion. Even if the student has, during the previous months spent in his preceptor's office, pursued his studies vigorously and systematically, his habits are entirely broken up by this passive and confused reception of such amounts of instruction; and, as he has little time to engage in that critical examination of subjects to which he has accustomed himself, soon looses the habit of doing so, and looses with it some of that mental vigour which can be preserved and increased only by active exercise.

"Great importance is commonly attached to the amount of knowledge communicated in lectures; and much has been said of the necessity of going over the whole ground in each branch of the science. In the opinion of the Committee, the usefulness of lectures depends not so much upon the quantity of instruction given, as it does upon the habit of mind which the lecturer imparts to his auditors. If he infuses into their minds a spirit of critical investigation and accurate observation, even though he leave much of his range of subjects untouched, he will do more towards making them successful, both in studying the science, and in practising the art of medicine, than he would if he should make them the passive recipients of all the knowledge which his branch includes.

"Applying the principles which we have indicated to the question in regard to the length of the lecture term, which has been so often, and so fully discussed, your Committee would say, that if in lengthening the term from four to six

months, it is intended that an addition be made to the amount of instruction, corresponding with the addition of time, the change will do harm. Four months is a period quite long enough for the student's mind to be made the passive recipient of such an abundance of knowledge. But, on the other hand, if no addition to the amount of instruction be contemplated, and the added time is to be employed in an active exercise of the mind of the student by examination on what he hears, then the change is a very valuable one. It will do much towards correcting the loose habits of thought and study which the present mode of instruction in this country has so strong a tendency to induce in the mind of the medical student.

"Lecturing and teaching should, to a great extent, be combined. Every lecture should be made the subject of strict examination at each succeeding lecture, and the whole class should be required to submit to this examination. We need not enlarge upon the benefits which would result from such a course. Suffice it to say, that it is absolutely necessary in order to insure, in the case of most students, that active reception of knowledge which alone can make it practically their own. And even in the case of those who are disposed to be diligent, the advantages of such a course would be very great."

There is much truth in the foregoing remarks. The leading defects in the plan of medical education in this country are distinctly indicated, and some of the means by which they are to be remedied pointed out. A sufficient preliminary education in the student; careful, methodical, and thorough instruction in the fundamental branches of medical science in the office of the private preceptor; the progress of the student and his correct appreciation of what he has acquired being tested by frequent examinations; the same course being pursued by the teachers in our medical schools. These measures, with a full and prolonged series of clinical instruction, which may be commenced by the private preceptor, and completed in the wards of the hospital, either during or subsequent to the pupil's attendance upon lectures, would go far towards increasing the competency of the physician at his entrance upon the active duties of his profession, and facilitate his further improvement in the theory and practice of the healing art, as well from the study of books as from the investigation of disease, its nature, phenomena, progress, termination, and treatment at the bedside of the sick. The education of no physician can be considered as completed in the schools, however judicious may be the course of instruction adopted; however competent the teachers by whom that course is carried out, and however assiduous and protracted has been his attendance upon it. Upon the reception of his diploma he has but commenced his life of study. He has mastered, it is true, the elementary branches of medicine; he has acquired the leading facts and doctrines and the therapeutic directions sanctioned by observation and experience; but it is only after he has entered upon the practice of medicine, that he can acquire facility in the application of these to the diagnosis of disease; and to its mitigation or cure. The proper plan for the study of disease, and of the means by which it is to be arrested, may be taught by preceptors and lecturers, but the *actual* study of the morbid states of the human system, and the most certain and prompt means for their removal must be pursued in the chamber of disease by the practitioner of medicine, aided by a careful consultation of those lights which "the masters of our art" have communicated for his instruction and guidance.

We admit the general correctness of that portion of the report in which the little esteem often accorded to talent and skill in a physician by the public at large, is referred to. It is but too true that "a practitioner of superficial talents and small acquirements often succeeds better, even among the intelligent and learned, in the acquisition of business, than one who is endowed with high talents, and is possessed of extensive and hard-earned acquirements." It is

often even worse than this. "To say nothing of the success of the undisguised quack, the accomplished and high-minded physician, devoted with his whole soul to the interests of science and humanity, while he struggles with care and debt, is obliged often to look out from the loop-hole of his retreat upon some plausible pretender, perhaps a renegade from our own ranks, surrounded with wealth, and the favourite not only of fashion, but often of intelligence also."

The baneful influence of such a state of things upon the character and attainments of our profession is forcibly depicted by the reporter. It deters young men of talents and education from entering our profession; restrains the zeal of those who would devote themselves to the enlargement and perfecting of the different branches of medical science, and induces too often the needy and timid members of the profession to assume the arts and habits of the charlatan in order to obtain a portion of public esteem and patronage. It exerts a sinister influence "upon the whole profession; upon the practitioner, upon the student, upon the schools; and even the professors are not upon an elevation so high that it cannot reach them. The general standard of education and attainment has received its character and complexion, to a very great extent, from this influence."

The chief means of removing the abuses which at present depress the standing of the medical profession and cripple its usefulness, is considered by the reporter, to be *the influence that can be exerted through the organizations of the profession*. We entirely concur in the correctness of all he says in regard to this subject, and shall close our notice of the report on Medical Education, with a somewhat long extract from this portion of it.

"This influence (that of organization) is of a compound character; social, moral, and scientific. And these three classes of interests in which this influence is seen are by no means independent of each other; but the social privileges, and the professional virtues of medical men have an important bearing upon their scientific attainments and character.

"These organizations are as yet very imperfect, and are, therefore, comparatively inefficient. We do not know yet how much good they can be made to accomplish. Many express themselves skeptically in relation to their usefulness, and are reluctant to meet even the small expense which is needed to sustain them. But the amount of good which results from them, even in their present imperfect state, is very great, and can only be estimated by comparison with those communities where no such organizations exist. And when they shall be perfected, the extent and value of their influence will be incalculable.

"The voluntary principle imparts great power to associated action. These organizations are, therefore, to do a peculiarly important work for the profession in this country. But in order to do this they need to be systematized, and the members of the profession must be brought more generally and thoroughly under their influence. At present the great mass of the profession have little else than a nominal connection with these associations. All the efficiency which they have depends upon the action of a few individuals, who are willing to sacrifice time and labour for the general welfare, in face of obstacles, and that worst of all discouragements, the chilly influence of prevailing indifference. And their efforts are too much confined to the larger associations. There are comparatively too few town associations, although, with small libraries and the periodicals, and occasional meetings at once of a social, festive, and scientific character, such associations would do vast good, not only within their limited circles of influence, but to the whole body of the profession. They would give life and efficiency to the larger associations; and not only so, but in giving they would also receive.

"Cities are great centres of influence in medicine, as well as in every other department of knowledge and effort. Weighty responsibilities, therefore, rest upon medical men in our cities. With them associated action, so powerful for

good or for evil, should be made as general and perfect as possible. It should not be left to small voluntary associations. These do good; but the good which they do is limited, and it is marred by abuses which are inevitable accompaniments of such narrow action. Cliquism is apt to creep in, and it sometimes exerts so deleterious an influence that many condemn such associations altogether upon this ground. But even cliques are better than an utter absence of association. They do more good than harm; and the harm which they do is, generally, in a great measure, neutralized by the influence of counter-cliques. If a general and thorough system of associations were in full operation, the strictly voluntary associations or clubs, would be more purely subservient to the common interests of the profession than they now are, because their liability to abuse would be very much abated.

"In every large city there should be one general association, with subordinate ones in the different districts into which the city should be divided, bearing such relation to the general association as County societies bear to State societies. These associations should be so regulated, and such efficiency should be given to them, that it would be for the interest of every physician to be a faithful member, if he wished to maintain a respectable standing with the profession and with the community. And if this were the case, men whose success results from dishonourable and quackish arts could not continue as they now often do, as a measure of policy, a merely nominal connection with the associations of the profession, but they would be obliged to take their proper place in the ranks of undisguised quackery.

"Association is the great means of creating and bringing into action a sound public sentiment among medical men. It, therefore, gives power to professional influences, and neutralizes those popular influences which tend to corrupt the honour of the physician, and to depress his standard of professional attainment. Knowing this, the practitioner, whose chief object is to obtain a merely popular reputation, as the means of pecuniary advancement, withdraws himself from the broad basis of association with the profession. If he does not stand wholly aloof, his connection with our organizations, which is, at the best, but a loose one, is regulated entirely by the principles of cliquism, or is, perhaps, a mere feint to enable him to practice the more secretly, and, therefore, the more effectually, the arts and tricks of the charlatan.

"The social influences of association are not among its smallest benefits. Individualism is almost an essential element of the jealousies, and quarrels, and bickerings, which have so often brought contempt upon our profession. And, on the other hand, these have no better cure, or rather preventive, than is to be found in what may be termed scientific socialism. If physicians meet together for mutual improvement, even though the discussions be somewhat warm, and the war of opinions be vigorous and obstinate, a friendly feeling will bear rule, especially if the festive board be spread; and an influence will be left which cannot be destroyed when each returns again to his own individual sphere of action. This continued influence of frequently recurring seasons of mutual improvement and enjoyment fortifies against the temptations to a dishonourable competition, which an uninterrupted individualism is so apt to engender among medical men.

"It is by no means a small consideration, in estimating the value of association, that it wins for the profession the esteem and confidence of the public. The union of men for scientific purposes always does this. And there is nothing which has done so much to weaken the confidence of the community in the medical profession as the jealousies and dissensions which have grown out of a selfish and narrow individualism.

"Such being the advantages of association in our profession, it is the duty of every physician to do all that he can to give to our organizations character and efficiency. If all who desire that the standard of medical character and attainment be raised would turn their influence into this channel, a great change would at once be effected in the condition of the profession in this country. The demi-quacks, who so much disgrace our profession in the eyes of the public, would be driven from our ranks. Public sentiment, both among medical men and in the community at large, would be renovated; and consequently the value

of professional reputation would rise, while that of a merely popular one would fall, even as a source of emolument. A reform in our systems of education would be vigorously prosecuted, and our schools would cease to send forth such numbers, as some of them now do, of unqualified physicians, to give currency to error and delusion in medicine, to destroy health and life, and to bring contempt upon our noble science. The medical literature of our country would be transformed by the change. It would be purified in correspondence with the improvement in the education of the profession, and it would be enriched by the vast resources of knowledge and experience, which would be gathered in by the multitudes of associations all over the Union."

As an appendix to this report is given a communication from Dr. Bowditch, containing the reply of Professor Horsford, to the inquiries of the former in relation to instruction in practical chemistry. The best plan for teaching chemistry is a subject to which too little attention has been heretofore paid; we trust that it will come again before the Association, in order that a full investigation shall be instituted into such improvements as may be introduced into this branch of medical instruction, with the view of facilitating the student in acquiring a knowledge as well of its principles as of its practical details and operations.

The Report of the Committee on Medical Education in relation to what has been termed "*Demonstrative Midwifery*," has especial reference to the course pursued by the Professor of Obstetrics in the Buffalo Medical College, which had become the subject of a legal investigation—the consideration of the value and propriety of this course having been referred to this committee, by a special resolution of the Association passed at its preceding session.

After briefly stating the facts of the case, and stating the advantages urged in favour of an exposure, before the eyes of the pupil of midwifery, of the conclusion of the process of labour, the reporter remarks:—

"Granting all that can be claimed with any plausibility for the advantages mentioned, they are not of sufficient value to make it proper that woman in the hour of her extremity should be made the subject of a public exhibition.

"But we not only object to the mode of instruction, adopted in the plan at Buffalo, as unnecessary, but we object to it, also, as being utterly *incompetent to give the student that knowledge which he needs in the practice of obstetrics.* It cannot take the place at all of what may properly be termed Clinical Instruction in Midwifery. A single hasty examination by the touch in the course of the labour, and a view of the conclusion of the process, can supply the student with but a very small part of that practical knowledge which he needs when he comes to take charge of patients upon his own responsibility alone. This knowledge he can obtain effectually only by taking the care of cases of midwifery during his pupilage under the supervision of his preceptor. A single case thus managed, will teach him more than a multitude of such exposures as that which was made in the Buffalo Medical College possibly could do."

Besides this general, and, we believe, correct conclusion, the report contains a few brief but very pertinent remarks on the general principles involved in the general subject. They deserve the candid consideration of every physician The opinions expressed in the report in reference to demonstrative midwifery received the unanimous approbation of the Association, as expressed by a resolution to that effect, offered by Dr. Dickson of S. C., and adopted without a dissenting vote.

The Report of the *Committee on Medical Literature* is understood to be from the pen of Dr. Thomas Reyburn, of Missouri. In the introductory remarks he states that, in entering upon a review of the character of the periodical medical literature of the period over which the report extends, it is with

views somewhat different, perhaps, from the opinions entertained by those who have preceded him. He has not felt himself called upon to criticize rigidly the papers in this department, as mere literary productions.

"We have deemed it unnecessary to bring to the test of grammatical rule, or to judge by the nicest standard of the rhetorician, the various productions submitted to our notice. We have been induced to regard these as in some measure minor points of consideration, from having borne in mind the fact that science is truth, and that in no department of investigation is the early period of its progress so independent of the refinements of scholarship as that of medicine. A novel inference, an important deduction, carries with it its full weight, no matter how homely the garb in which it may be clothed. A new light thrown upon disease, a valuable remedy suggested, is easily grasped at, no matter how unstudied the recommendation, or provincial the style in which it may be urged. Names familiar to our ears, as beacon lights in science, have waxed bright without the lustre borrowed from mere literary culture, and although we may not say how much more they might have accomplished with enlarged educational advantages, we prize too highly the imperishable legacies they have left to our profession, to run the risk of deterring from like efforts any one of those who might be induced to make them, and such we consider might be the effect of injudicious or ill-timed criticism upon mere style and manner of writing, where zeal and honesty of purpose are apparent in the contribution. The productions of men of acknowledged talent, who to the examination of scientific truths have brought but a modicum of scholarship, yet with strong native genius seizing upon the investigations and suggestions of others as guides to further developments, have given to their fellow-labourers the fruits of their toilsome research, regardless of the smooth sentence, the rounded period, and the finished style, have taught us to bend in grateful acknowledgment before the efforts of their vigorous minds, and have deterred us from criticizing what we may not aspire to equal."

We know not whether we clearly understand the precise views that are intended to be inculcated in the foregoing, and other kindred remarks, presented in the very commencement of the Report on Medical Literature. If nothing more be meant than that it is unjust to reject or undervalue important facts in either of the branches of medical science, because they are communicated in a plain, defective, or inelegant style, or to censure the contributor of novel and important facts, because he has neglected to express them in polished and unexceptionable language, we admit the correctness of the author's views. We are unaware, however, of any medical reviewer of character and authority, who has been guilty of refusing the praise due to valuable contributions to our science, even when clothed in the most homely language. The fact is, we fear, that the fault of our reviewers has rather been of an opposite kind; they have, too generally, not only passed by in silence errors of style of every kind, but have often even praised where censure was richly deserved.

But while we admit that the value of the matter communicated is of far more importance than "mere elegance of style," we nevertheless insist that the style is a legitimate subject of criticism, even in professional works and papers. In communications of a scientific or practical character, nothing further is required in respect to language than lucidness, accuracy, and as much terseness as is consistent with perfect clearness; every attempt at ornament or rhetorical flourish is not only uncalled for but ridiculous. An active and vigorous mind, habituated to close and accurate observation (and from no other can we expect valuable contributions), very soon acquires a facility in expressing itself with clearness and accuracy; gross errors in style will, in fact, very generally be found to occur in communications of little merit. Occasionally a quaint, affected, or highly ornate style is made choice of by medical men of

unquestionable talents but of vitiated taste; while others strive after an appearance of originality and profundity, by interlarding their communications with imitations of foreign idioms, and the choice of foreign words where the idea intended to be communicated could be expressed with much greater clearness and precision by English terms in common use. To put a stop to such perversions of style, is the legitimate province of the critic. Equally is it his duty to notice obscurity and vulgarity of language, and a constant violation of the established rules of grammar and of composition. A proper preparatory education should be insisted upon in every one who would enter upon the study of medicine. It is a vulgar error that native talents cannot be benefited by such an education; that truth is generally communicated in more original and vigorous language, by those who have been deprived of, than by such as have enjoyed the advantages of a proper literary training. Many of the standard works of our older, as well as our contemporary physicians, works which have had a powerful influence in enlarging the boundaries of medical knowledge, and which will long be received as authoritative on the particular subject or department of which they treat, are written in a pure, correct and even elegant style. Professional talents and attainments may unquestionably be possessed by those who have had no opportunities of acquiring a knowledge of and facility in composition, but when they desire to communicate the result of their professional observations and studies to their brethren, their want of facility in the use of written language will become apparent, and, often, by obscuring, will impair the value and the influence of the important truths they announce.

After presenting a general view of the more important papers embraced in the Medical Journals of the United States, for the year 1850, the reporter closes this branch of his subject with some remarks on the characteristics of our professional periodical literature.

He alludes to the small amount of original matter in general contributed by the editors of journals themselves; much less, certainly, than is usually contributed by foreign editors to the columns of their journals. But not only are the American editors censurable, in the opinion of the reporter, for the rarity of their own original efforts, but also, "in neglecting to correct the contributions of others," which they accept for insertion. He would have the editor improve the rhetorical finish of the papers of his contributors, and divest them of their incorrectness and inappropriateness of language. In other words, if we understand him correctly, reclothe the correspondent's thoughts "in words more fitly chosen and more appropriately placed." Revising the papers he may receive, which, while they are "most creditable to the intellectual capacities of the writer," yet "lose half their interest by being placed before the reader in their rough habiliments of weeds, not flowers of speech, when a more becoming vesture might readily have been furnished by erasures, additions, condensations, or other corrections in the Editor's closet."

We doubt whether the reporter was ever engaged in the editorship of a medical journal; if he were, and really did set out to perform, for his contributors, the task of correcting and re-writing their communications when these were deficient in style and condensation, he must have found little time to furnish for its pages any considerable amount of original matter from his own pen. Some few of those who were willing to assist in filling up his pages he may have gratified, by clothing their thoughts in fitting language, but he had to deal with a very tractable class of contributors if the majority did not protest against their communications being divested of their own humble, awkward, and ill-fitting vesture, and decked anew, even by an Editor, in a better and more becoming style.

We believe it to be the duty of the editor of a medical journal to correct, in the articles adopted by him for insertion, all glaring grammatical errors; to suggest to the writer better forms of expression, the omission of an objectionable sentence, and the curtailment of all redundancies, or even, in some instances, to take upon himself the responsibility of such emendations. But it could hardly be expected of him to undertake, even with the consent of his contributors, excepting in a few very particular cases, to re-write for them their papers, however valuable may be the matter they embrace, and however incorrect the style in which they are composed. No contributor, even though his contributions be gratuitously offered, has a right to expect this; and no editor would be able to satisfy all for whom he performed this labour even in the most skilful manner.

We agree fully with the reporter in his remarks upon the importance in scientific papers, of "language sufficiently accurate and intelligent to enlist attention and to inspire confidence in the statements advanced." We equally regret with him "the common-place, inaccurate, in short, *illiterate* language, so often suffered to find its way into journals." It is unquestionably true, as he remarks, that "accuracy of expression is, of all things, important in medical writing; and if we would seek to elevate the character of our periodical literature we must, even in the least important contributions, avoid a degraded character of language." Now we would inquire, in view of the importance of this accuracy and correctness of style, whether it is not the duty of the critic to point out all striking violations of it.

In the general remarks upon a national medical literature with which the report closes, the declaration made near its commencement is reiterated: namely, that the absence of rhetorical elegance, the infringement of rules for correct style, and even the occasional evidence of want of acquaintance with English grammar, in medical communications, "are amply compensated for if these communications enunciate discoveries that give added light, though but a feeble ray, or experience that will direct, although but a few steps, in advance of the present," in aught that relates to the healing art.

Although the reporter asserts that he would not wish to be misunderstood as undervaluing the advantages of literary education in the physician, still we fear that many who read his report will draw the conclusion that, in the opinion of the writer of it, "sound natural judgment, untiring conscientious industry, and extended experience," will enable their possessor to do very well without any literary education whatever.

It is unquestionable that the most protracted and ample course of instruction in grammar, rhetoric, and belles lettres—what may emphatically be denominated a liberal and classical education—will not confer intellectual powers upon him to whom nature has denied the requisite mental endowments. They are, still, all important, whatever may be the extent of native talents possessed by the individual, by strengthening his intellect, maturing his judgment, and increasing his facilities for the acquisition and the communication of knowledge.

Many, by their own unaided power of intellect, have risen to eminence as physicians, and as correct and even polished writers, without the advantages of literary education in their younger days. But how has this success been achieved? Not by intuition, but by a laborious course of self-instruction. Now, we insist, that even in these instances, a literary education, acquired before entering upon the study of medicine would have been of advantage by permitting the time occupied in self-instruction, always pursued under more or less disadvantages, to have been devoted to the pursuit of strictly professional knowledge.

Much of the reporter's arguments, to prove that the profession of medicine in the United States has not suffered from the want of a national medical literature, are based upon the supposition that they who contend for its promotion and encouragement believe it to be essential to professional talents and skill. Such, however is not the case. We know that the regular practitioners of this country, taken as a body, will bear a very favourable comparison, as practitioners, with those of any other country. But we wish to elevate them above the class of mere skilful practitioners. We desire that they should repay the debt which they owe to Europe, for the instruction they have derived from its medical literature; that they should not confine to the circle of their own patients the knowledge they have derived from experience and observation, but that they should become co-workers with the "master spirits" of our profession in other lands, by embodying the results of that experience and observation in a form accessible to the whole profession, and thus contributing towards the general stock of medical knowledge.

Not merely to practice well his profession, within the comparatively limited sphere to which each physician is necessarily restricted, should be the ambition of the enlightened and benevolent members of our profession; it should be their aim, also, as far as in their power lies, to extend the boundaries of the healing art, to increase its certainty, and diminish the number of those diseases the fatal course of which it is as yet powerless to arrest. The medical journals afford certainly one, and a very important means of communication between the members of our profession. But still their influence and circulation are restricted. The entire profession can be reached only when the information and instruction we have to communicate are embodied in a regular treatise or monograph. It is in such a form alone that the medical productions of any country will be received in the light of a national medical literature.

The reporter believes that the encouragement of an American Medical Literature is a matter of very little importance, from the fact, that "the scientific works of Europe are upon our tables here, in an incredibly short time after their appearance there"—that a foreign work imparts the same degree of knowledge in America as if written by a native of our own country—and that a discovery in science sheds the same light upon all parts of the globe where it can be understood and appreciated, as upon the spot whence it emanated. In other words, that for the onward progress of our science, it is useless for the profession in this country to labor, when its members can, with such facility, avail themselves of the labours of every industrious and talented physician of Europe. But are we to depend also upon the Medical Literature of Europe for accurate delineations of the medical topograghy of the different sections of our own country compared with their endemic diseases; for the description, pathological anatomy, and treatment of the maladies of our own country, and for the embodying, in a form adapted for general information, of that store of therapeutical experience which the American physician has acquired in the wide field for professional observation in which he is placed? A National Medical Literature can by no means be dispensed with. To fulfil the duties they owe to the profession at large, the physicians of this country, while they profit by whatever instruction they can receive from Europe, are bound to communicate, in return, the results of their own labours for the augmentation and perfection of the several departments of the healing art.

The report from the *Committee on Hygiene* is confined to a consideration of "the best methods of warming and ventilating public and private build-

ings;" upon which most important topics the observations and details are of a highly interesting character; the more so as the plans for warming and ventilation referred to by the committee are altogether practical.

The main points dwelt upon in the report are: The fearful effects of breathing air contaminated by the breath and other emanations from bodies in health and sickness. The necessity of a free supply of pure air for the promotion of physical vigour and health, and the disarming of infection.

Ventilation is viewed as consisting of two processes:—

"1. The means of effecting the removal of impure air from buildings; and,

"2. Those adopted to supply fresh air for the inmates.

"When the means proper to secure ventilation are united with those for warming buildings, the joint system has been very appropriately termed thermo-ventilation, the advantages and most improved plans for accomplishing which are described."

There is much truth in the following remarks, of which the public generally are profoundly ignorant—an ignorance which has been an unsuspected source of suffering and disease:—

"At the present day, by far the most common means of imparting heat to apartments is by means of open fire-places and ample chimneys, required for the escape of the smoke and gases produced from the wood fires. The drafts of air produced through such chimneys not only secure a free ventilation but often cause such a rapid flowing in of the external cool air in currents as to lead to inflammatory attacks, which tend greatly to neutralize the advantages derived from a free circulation of pure air. Next comes the use of close iron stoves, and the open grate for burning coal. Both of these, but more especially the hot stoves, deteriorate the air of apartments very much, so that when breathed it produces most unpleasant feelings, such as stupor, headache, and general oppression. These evils are considerably diminished by the substitution of brick and porcelain stoves, such as are commonly used in Russia and Germany, and other parts of Northern Europe; those seldom becoming so hot as to decompose the dust of the air, and thus cause deterioration.

"What are commonly called *air-tight* stoves may be economical contrivances, where the consumption and cost of fuel are the only considerations; but in the long run, especially when used in close apartments, or where many persons are present, they cannot fail to be most wasteful of that which is of far more account than money, namely, health. A great deal of inventive talent has been brought into requisition for the purpose of devising the best means of warming buildings. But it must be confessed that, in most instances, economy of fuel has been a greater desideratum with the inventors than any hygienic considerations."

In reference to the suggestion from the Smithsonian Institute, on the collection of statistics calculated to afford information relative to the prevailing diseases of different parts of our country, referred to the Committee on Hygiene, a plan is presented which the committee believe will most effectually obtain complete returns from all sections of the Union, and suggestions made as to the most practically useful mode of arranging and tabulating the returns when received.

They recommend that the blank forms furnished by the Institute should be distributed by the State Medical Societies to their members, with an earnest request that they should make faithful returns of all deaths occurring in their practice. That the returns received by the State Societies should be tabulated and arranged upon a general and uniform plan by each society, and the returns and tables prepared from them sent to the Smithsonian Institution, where their compilation and arrangement into a more comprehensive form could be effected by a committee of that body.

Excellent suggestions are also made as to the particulars necessary to be embraced in the returns in regard to each case of death, and a form given for their tabulation.

The report closes with some very proper comments on the injurious consequences resulting from the use of quack medicines, and on the reprehensible practice pursued by many members of the clerical profession, in giving their influence and encouragement to imposture and deceit by recommendations of the vilest nostrums, sometimes without any other consideration than to further the pecuniary interests of one in whom they have an interest; occasionally, from a mistaken belief in their efficacy in the cases in which they are recommended, and sometimes, we fear, from direct opposition to the regular medical profession. These comments are the result of two resolutions bearing upon this subject, which were referred to the committee at the last session of the Association.

This very excellent report, drawn up by Dr. P. C. Gaillard, of Charleston, S. C., closes the series presented to the Association, and by them directed to be published in the transactions of their fourth session.

The *Prize Essay*, on the *Corpus Luteum of Menstruation and Pregnancy*, by Dr. Jno. C. Dalton, completes the present volume.

This is a most interesting and valuable contribution to the physiology of the reproductive organs of the female, confirming, by a series of careful observations on the condition of the ovaries subsequent to menstruation and pregnancy, in the human subject and in the cow, the opinions of previous observers on certain points, and throwing entirely new light upon others.

The essay is one highly creditable to its author, and confers honour upon the Association under whose auspices it has been brought out.

An idea of the general bearing of the observations of Dr. Dalton, will be derived from the following extract from the introduction to his essay.

After quoting from M. Pouchet his remark, that—

"Since the fact of spontaneous ovulation has been demonstrated, it must be now superfluous to point out the futility of the distinction between true and false corpora lutea; they are all produced by the same processes; they have all discharged ova before presenting themselves under the aspect which they assume after that occurrence; and whether the ovule which they have expelled does or does not become fecundated, whether or not it undergoes the transformation into an embryo, all have, nevertheless, the same form and the same structure"—

Dr. Dalton states, that—

"*It is the object of the present paper to show that this conclusion of M. Pouchet is entirely erroneous; that the corpus luteum of pregnancy is different from the corpus luteum of menstruation; and that it may, under ordinary circumstances, be readily recognized and distinguished from it.*

"In the following pages, however, I shall regard the five principal propositions of M. Pouchet as definitely established by the observations and arguments contained in his treatise; for, probably, nothing which could be here brought forward would add any very material weight to the evidences there presented.

"Nevertheless the reader will undoubtedly discover, among the following observations, many collateral proofs of the theory of spontaneous ovulation, to which it will not be necessary to direct his attention particularly.

"It will readily be comprehended that the difference hereafter to be established between the corpus luteum of menstruation and that of pregnancy is not an essential or fundamental difference. Since the regular and periodical rupture of the Graafian vesicle and discharge of ova, at the time of menstruation, are here recognized, as well as the fact that corpora lutea are always formed in

the ovaries as a consequence of such rupture and discharge, the differences alluded to must necessarily be owing only to variations in the subsequent changes in the ruptured vesicle, the most important parts in either case still remaining and preserving their original relations. The principal fact, therefore, to be established in the present memoir may perhaps be more accurately stated as follows:—*That the presence of a fœtus in the uterus induces certain modifications in the growth and progress of the corpus luteum, by which, during a certain period, we can be enabled to decide with certainty that pregnancy has existed;* and that these modifications follow a regular course of progression and retrogression, by which we can estimate, in a proximate manner, the period to which pregnancy had advanced at the time of death.

"The importance of this subject, particularly in a medico-legal point of view, is too evident to require notice."

The essay of Dr. Dalton is illustrated by some twenty-six wood-cuts, and four coloured lithographs, executed in a style highly creditable to the state of the art in this country. D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XIII.—*Essays on Life, Sleep, Pain, &c.* By SAMUEL HENRY DICKSON, M. D., Professor of Institutes and Practice of Medicine in the Medical College of South Carolina, &c. 12mo. pp. 301. Philadelphia, Blanchard & Lea, 1852.

THIS collection of Essays, from the pen of Dr. Dickson, forms, certainly, one of the most readable books recently issued from the press. It is filled with excellent matter, well and pleasingly expressed. He who can take it up without a strong desire to complete its perusal, and a feeling of regret that the essays which compose it are so short and few in number, must possess a strange apathy to the all absorbing topics of which it treats, in a style and point of view peculiarly attractive. In a knowledge of the physiology of life, and sleep, and intellection, and pain, and death, all have an immediate and deep interest. An acquaintance with these subjects is not of importance merely to the physician, nor are they to be viewed simply as questions of curious investigation within the province alone of the natural philosopher. On the contrary, they are of universal interest. Their study recommends itself to all, from the important results to which it leads in reference to some of the prominent principles of a correct hygiene or philosophy of health.

The essays of Dr. Dickson cannot be received, we admit, as profound physiological investigations of the topics of which they treat; in this light, it is probable, their author never intended they should be viewed, but rather as off-handed sketches calculated to engage the attention of the intelligent non-professional reader in the study of subjects usually, though erroneously, regarded as of a strictly technical character. To this end they are admirably adapted. They settle, it is true, no leading question, nor do they clear up satisfactorily any of the difficulties connected with the physiology of life, sleep, pain, intellection, or death; they add nothing to our knowledge of the philosophy of health, and of the means by which it is jeoparded or destroyed. Still, upon each of these topics, they present many important truths, intermingled with not a few ingenious suggestions as matters for reflection and further investigation.

We by no means admit as incontrovertible every hypothesis in which Dr. Dickson has indulged, nor the conclusiveness of all his reasoning from acknowledged facts in their support.

In his essay on life, the author, in his attempt to define vitality, or the cause of living phenomena, has gone back to the old doctrine of a mystical independent vital principle, superadded to organized matter. A doctrine incapable of proof, and when closely investigated, so replete with difficulties and absurdities, that we are somewhat surprised to find so intelligent and close an observer willing to range himself among its supporters. Our readers will, we think, admit with us how purely hypothetical is the supposition of an independent vital principle, by perusing the following extract in which Dr. Dickson defines his own position on the subject of life:—

"I know not how better 'to define my own position,' to express my own views on the controverted topic, than thus:—Life, vitality, the vital principle, the cause of living action, is an active and peculiar force existing in certain bodies; not a *quality* like hardness, softness, &c., but a power belonging to them derivatively, as I shall show hereafter; a property with which they are endowed on coming into existence in the forms known as organic. It is not oxygen, as Girtanner suggests; Matteucci gives abundant reasons for inferring that it is not electricity, as Abernethy and Wilson Phillip were disposed to believe, and as it is now quite fashionable to suggest in the use of the terms electro-biology, &c.;

nor is it a presiding genius, an archæus, an almost or quite intelligent agent, as Stahl and Prout have hinted; nor a mere pre-established harmony, as Aristoxenus and Liebnitz imagined; nor the product of organization, as Lawrence, Pritchard, Mayo, and so many others maintain; nor is it to be found, as Cuvier, Bichat, and Coleridge intimate, rather darkly, I think, in the *tout ensemble* of the functions, or anything else—to borrow the parliamentary expression of Mr. Joseph Hume, of financial fame, 'the sum total of the whole.'

"I find a Supreme Being absolutely necessary in philosophy, as Robespierre did in social life. I cannot look upon vitality as a mere quality, the physical or mechanical result of any constitution, or arrangement, or composition infinitely varied, but may be withdrawn, leaving all these conditions, as far as we are aware, unaltered. The very simplest of its manifestations are inexpressibly difficult to account for or comprehend; its very earliest influences altogether inscrutable, its apparent spontaneity of action, and its passive resistance to the effect of external agencies, equally inexplicable; and as we contemplate it more and more closely, we are filled with a deepening conviction that there is nothing in the vast store house of nature more calculated to awaken intense curiosity, to invite assiduous investigation, and to give rise to solemn consideration, than the construction and movements of a living body 'fearfully and wonderfully made,' and still more fearfully and wonderfully endowed with almost infinite capacities for action, for enjoyment, and for suffering. Let us humbly acknowledge that of this principle in the abstract we have hitherto formed very inadequate and unsatisfactory conceptions; and shall, perhaps, always remain unsuccessful in our researches concerning it. It may be that He alone, who possesses within himself this mysterious attribute, and who, of his infinite power and benevolence, has communicated it to a part of his creation, can fully comprehend its nature and its essence."

There are several of the author's positions, in reference to the other subjects treated of by him, that we esteem somewhat controvertible; they refer to physiological questions, however, as yet unsettled, upon which each one is at liberty to form his own opinions after a careful examination of the facts calculated to throw light upon them. But although we cannot agree with the author as to the inferences legitimately deducible from well-established facts in regard to certain points connected with the topics embraced in the essays before us, still we waive any discussion of these points of difference, and freely acknowledge the general correctness of the doctrines inculcated by him.

We present the following extract from the essay on hygiene, as expressive of views, by no means novel, it is true, but so important that they cannot be too frequently urged upon the notice of every community.

"I have left myself very little time or space, remarks Dr. Dickson, to treat of Municipal or Public Hygiene; the most neglected, yet, as it seems to me, the most truly important of all the departments of political economy. Men have devoted time enough, ineffectually, in continuous efforts to *relieve* suffering and *punish* crime. I do not deny that these are proper objects of attention; but surely, if we can by any method *prevent* crime and suffering, this should be our paramount purpose; and I fully believe that the physical destitution of the poor is the chief cause of intemperance, vice, and disease among them. I fully believe that if one-half the amount expended in hospitals and alms-houses, prisons and penitentiaries, were appropriated with judgment to the care of the physical well-being of the wretched class with which these institutions are filled, the remaining moiety would be far more than sufficient for the necessities that now, with the most unsatisfactory results, consume the whole. Extreme poverty, one of the saddest and bitterest curses inflicted by an angry Heaven; extreme poverty, the double cause and consequence of disease, is the most prolific parent of crime. Of this the inquiring moralist may be satisfied by copious testimony. Governments, then, can exercise no function of more profound responsibility than that which looks to the hygienic condition of the community. In the great plagues of Florence and of London, nay, in the modern cholera, the multitudes grew violent and reckless, robbery and murder stalked fiercely through the desolate streets. Let us eat and drink for to-morrow we die, became the maxim, as well with the refined sensualist of the Decameron, as with the grim ruffians of

St. Giles and the Parisian fauxbourgs. Such demoralization follows always upon the heels of pestilence and famine.

"It would be Utopian to imagine that any effort can altogether preclude, among men constituted as they are, the infliction of this curse of poverty upon the improvident and imbecile. But it is possible to diminish the number of its victims, and to evade the diffusion of its malignant influence beyond the circle of its inevitable presence. Policy, as loudly as humanity, demands that this should be earnestly attempted. The rich man, in his luxurious cabin, may be infected by the ship fever of the miserable emigrant in his crowded steerage. Pent up within the thronged area of a great city, he will likewise suffer from typhus generated in the lanes and alleys, hovels and cellars, among which he must reside, or whose pestilential breath he must inhale in passing. The citizen who will not provide for the enforced purification of the streets and houses about him, may soon become the victim of the miasms eliminated there; although his own proud palace may seem, by its admirable architecture and its comfortable appointments, elevated far above the sources of such miasms. We are linked inseparably together, the rich and the poor, the lofty and the low. Our voyage across the great ocean of existence must be made in one common bark, wafted by the same favourable breezes, tossed by the same rough billows, and wrecked in the same rude tempests. 'Nothing human can be foreign from us,' whether we regard the affairs of our race with the genial sentiment of the Roman dramatist, or look upon them with the cold and calculating eye of the selfish voluptuary."

As a popular exposition of the interesting topics of which it treats, we know of no work better calculated to engage the attention of the intelligent reader than the series of essays before us; none from which he will receive greater pleasure and instruction. D. F. C.

Art. XIV.—*Reports of American Institutions for the Insane.*

1. *Of the Maine Insane Hospital*, for 1848, 1849, and 1850.
2. *Of the New Hampshire Asylum*, for 1849 and 1850.
3. *Of the McLean Asylum*, for 1849 and 1850.
4. *Of the Massachusetts State Hospital*, for 1849 and 1850.
5. *Of the Butler Hospital*, for 1849 and 1850.
6. *Of the Hartford Retreat*, for 1848, 1849, and 1850.
7. *Of the Bloomingdale Asylum*, for 1849 and 1850.

More than two years have elapsed since we last published an abstract of the reports emanating from the various public institutions for the insane, then existing in the United States. During the intervening period, the general scheme for meliorating the condition of those who are afflicted with mental disorders, has advanced with that accelerated rapidity, imparted to it by the active and energetic labours of the preceding twenty years. Two new State institutions have gone into operation; several of those previously existing have been enlarged, and measures have been taken by the legislatures of other States, for the erection of similar establishments within the limits of their legislation, respectively. Miss Dix, whose labours in the cause are too generally known to require a recapitulation, has pursued her mission with an energy that never abates, and an assiduity that knows no interruption. The medical superintendents of several of the institutions have been changed. No less than three of the physicians who had become the most distinguished in this speciality of the profession, have deceased. The aggregate number of the insane collected into hospitals has very considerably increased; and, finally, a large amount of matter has accumulated upon our hands. We proceed to lay such portions of this as we think the most interesting or useful before our readers:—

	Men.	Women.	Total.
1. The number of patients in the Maine Insane Hospital, March 31, 1848, was	80	47	127
Admitted during the year	60	63	123
Number of cases under treatment	140	110	250
Discharged during the year	61	62	123
Remaining March 31st, 1849	79	48	127
Of those discharged there were recovered	11	17	28
Died	8	10	18

Causes of Death.—Dysentery, 9; phthisis, 4; apoplexy, 2; "exhaustion," 2; partial paralysis, 1.

"About the middle of August," says the report, "with more inmates than at any (previous) time since the house was erected, a malignant dysentery, or rather *colonitis*, began to afflict our inmates, and, soon after, several of the officers and attendants were prostrated by it. In a few weeks, about fifty cases occurred, of whom nine died. Severe and unmanageable as the disease showed itself, one death only took place in any person who had not been weakened by years of previous disease. If the disease was not *rheumatic* in its character, it certainly was followed, if not suspended, by an acute type of that malady, affecting the membranes of joints, and in one case, the joints and eyes alternately. There were but few cases of relapse. In one, however, there was a renewed attack and death, after several weeks of convalescence. * * *

"We are constrained to confess that the common remedial agents disappointed our expectations; and were the disease to repeat its visit, with the knowledge thus far acquired, we should confine our action to cleanliness, ventilation, and the administration of such quieting or stimulating remedies as nature seemed to require, to enable it to struggle through the contest. Few diseases, if any, are accompanied by more offensive emanations than the one under consideration."

Before reading the report, we do not recollect to have met with the result of any researches in regard to the comparative curability of suicidal insanity and other forms of the disease. Hence, we regard the following extract as one of no inconsiderable interest. "Of eight hundred and sixty-eight cases which have been in this hospital, *one hundred and one* are known to have had a propensity to suicide. *Fifty-one* have recovered, which is *twelve per cent.* greater than the average recoveries on eight hundred and sixty-eight admissions. Whether this results from the disease being more easily recovered from, or in consequence of their being sooner committed, I have not the means of judging with any degree of accuracy. It is certain that some of the most perfect recoveries that ever took place here, happened to some of the most determined of this class."

On the 1st of January, 1849, an additional edifice, forming a wing one hundred and fifty-eight feet in length, and designed for male patients, was opened for occupation. It was warmed by steam, according to the present improved method. Dr. Bates in this report, recommends the construction of a similar wing for females, to meet the increasing applications for the admission of patients.

The report for 1849, opens with an allusion to the exemption of the inmates of the establishment from the Asiatic cholera, which prevailed in the summer of that year.

	Men.	Women.	Total.
Patients, March 31. 1849	79	48	127
" admitted during the year	63	63	126
Whole number of cases " "	142	111	253
Number discharged " "	56	53	109
" remaining March 31, 1850	86	58	144
Of patients discharged, there were recovered	30	28	58
Died	8	7	15

Causes of death.—Paralysis 4, marasmus 4, apoplexy 2, exhaustion 2, phthisis 1, phrenitis 1, old age 1.

The *piquancy* of the following extract is peculiarly refreshing. "Whether more or less of our patients recover than in other institutions, exactly similar in all respects, if there be such, I am unable to say. Some boast of more cures than have ever been realized here, while others, equally meritorious, so far as I know, have been so modest as to report even less than we have done. We are certain that many of our institutions possess appliances which are not, and probably never will be furnished to this; and it is not unreasonable, other things being equal, to look to them for greater success."

As a suitable companion to the foregoing, we subjoin the doctor's remarks upon statistics. "When honestly made, they are not likely to do injury; but I am sure they are sometimes made instruments of deception. If figures cannot lie, they may mislead, by disguising the truth. For instance; suppose, at the end of each year, instead of reporting all cases as *recent*, which were actually admitted within one year of the attack, I should, for the purpose of *appearing* to cure 90 per cent. of recent cases *discharged*, report only *such* as *recent* cases as had not become *old* ones by remaining with us, I might impose the belief on the *uninitiated*, that 90 per cent. of recent cases could be cured; when every man acquainted with the subject knows, that no instance can be shown, in which 90 out of 100 cases, admitted in succession, no matter how *recent*, were ever cured.

"On our examination of our records, I find there remain, this day, sixty-five cases which were admitted within one year of the attack . . 65
Seventy-nine which were more than one year 79

Total 144

"But 'as the manner of some is,' calling none *recent*, except such as have not *now* been insane over one year, the account stands,

Recent (cases) 36
Old " 108

Total 144

Our cases remain as first recorded."

Few physicians have entered more into the details of the statistics of insanity than Dr. Bates, and his productions in this department, carry with them the evidence of "honesty" in their compilation, while their accuracy and perspicuity are unrivalled.

The value of many of the statistics of insanity is materially deteriorated by including the whole number of *cases* rather than that of the number of *persons* admitted into the hospitals. The second and still subsequent receptions of the same individuals, form an element in the calculation too important to be overlooked. Thus, according to the report before us, the whole number of *cases* admitted into the hospital was 994, while the number of *persons* was but 807. The admissions after the first were as follows: Second 134, third 26, fourth 14, fifth 6, sixth 3, seventh 2, eighth 2.

Of the 994 *cases*, 403 had been discharged cured, and 78 had died.

In the course of the last winter, the public were generally informed, through the medium of newspapers, of a terrible incident in the history of the Maine Insane Hospital. In their report for 1850, the trustees of that institution thus allude to the fatal accident.

"Since the last annual report, the two south wings of the hospital have been burnt. * * * * This catastrophe occurred between three and four o'clock on the morning of December, last (1850)—a period when all was quiet, and supposed to be secure from any casualty of this sort. The fire originated in the hot air-chamber under the old south wing, probably from some defect in the arrangement of the smoke-pipe connected with the warming apparatus, and spread with great rapidity. The flues leading from the hot air-chamber, affording a direct communication, very quickly filled the galleries with smoke, gas, and heat, incompatible with human life, rendering it more than probable that those who perished were suffocated long before the fire reached them.

"Soon as the fire was discovered, every effort was made for the rescue of the inmates; first, by opening their dormitories, and, when the smoke and gas rendered that impracticable, recourse was had to the windows on the outside of the building, by means of ladders, by which several were removed.

"The progress of the fire was checked before it reached the north wing, consequently the female patients were all safely removed.

"Twenty-seven of the inmates (patients) perished in the conflagration. One of the attendants, Mr. H. D. Jones, while nobly exerting himself to rescue the patients, shared the same fate.

"The officers, without much difficulty, succeeded in procuring good temporary accommodations for the inmates, in private dwellings, in the Augusta House, and, for some of the most furious, in the county jail, under the immediate supervision of the attendants, until they could be removed by their friends, or otherwise provided for."

Dr. Bates, in his accompanying report, says, "To those who merely speculate on such matters, it may be easy to conjecture how fire should be communicated from a funnel sixty feet from the fire-grate, when no fire had been placed in the furnace for more than nine hours; but to those (a jury of inquest) who spent ten days in the inquiry, it remained a matter of uncertainty. The stove-pipe, near where the fire was first discovered, had been put up under the Steward's directions, within six weeks of the time of the fire; and, though I never examined that portion of the pipe, I had every reason to believe that it occupied the same position it did during the whole of the winter previous.

"Much has been said about the fire being set by an incendiary; some undoubtedly believe it now. It may not be improper for me to say, I have never entertained such an idea for a moment."

	Men.	Women.	Total.
Number of patients, March 31st, 1850	86	58	144
" admitted in ten months, to Jan. 31st, 1851	50	40	90
Whole number	136	98	234
Discharged	104	78	182
Remaining, January 31st, 1851	32	20	52
Of those discharged, there were cured	30	21	51
Died	35	4	39

Causes of Death.—"Suffocated at the burning of the hospital," twenty-seven; general paralysis, three; marasmus, three; "prostration, from violent mania, two; phthisis, one; old age, one; chronic abdominal inflammation," one; acute inflammation, one.

The people of Maine are indebted to Dr. Bates for the original draft of their laws in regard to the insane, and to insanity in all its legal relations. These are, undoubtedly, as nearly perfect as any in existence. In the report before us, he makes the proposition subjoined.

"I submit, for the consideration of the Legislature, the subject of a penal act, making it the duty of any person who shall know of any cruelty or abuse to an insane person in the Insane Hospital, or elsewhere in this State, to give information thereof to a magistrate, or to the superintendent (if at the Hospital), within ——— days."

In January last, Dr. Bates, having been appointed by the Governor and Council to visit the Institutions in other States, for the purpose of learning any improvements which may be introduced when the Maine Hospital shall be rebuilt, resigned the place of superintendent. Dr. H. M. Harlow, the Assistant Physician, has hitherto fulfilled the duties of the position. He makes an addition to this report for the two months necessary to complete the official year.

	Men.	Women.	Total.
During this period there were admitted	6	7	13
" " " discharged	6	3	9
" " " cured	3	1	4
" " " died	2		2
Remaining, March 31st, 1851	34	24	58

Causes of Death.—Serous apoplexy, one; phthisis, one.

In some remarks upon hereditary insanity, Dr. H. says, "it is, *undoubtedly*, a fact that the mother is more likely to transmit the predisposition than the father, and a good deal more likely to transmit it to daughters than to sons; while the father more frequently transmits it to the sons." These propositions are asserted with a degree of positiveness which, in the present state of knowledge upon the subject, appears to us as hardly warrantable.

In regard to the prevalence of mental disorders, he says, "we hazard the opinion that, could an accurate census be taken of the insane and idiots who are incapable of taking care of themselves, in Maine, the proportion would be found to be one in every three hundred of its inhabitants. And the same melancholy fact, we believe, would obtain in all the other New England States." We do not recollect to have seen so high an estimate of the insane and idiots in any other portion of the world, excepting, perhaps, a part or the whole of Scotland, and a district in Yorkshire, including the city of York, England.

2. "So far as statistics can furnish an inference," says Dr. McFarland, of the New Hampshire Asylum, the past year (1849) has been the most successful that the institution has known since its foundation. A number unusually large has been received, more have recovered, and the proportionate mortality has been less than in any preceding year.

	Men.	Women.	Total.
Number of patients, May 31st, 1849	52	62	114
" admitted during the year	59	44	103
Whole number	111	106	217
Discharged	38	52	90
Died	3	4	7
Remaining, June 1st, 1850	69	58	127
Of those discharged, there were cured	17	28	45

The report states, that the institution has "been filled with inmates beyond its proper capacity during the whole of the official year. To remedy this inconvenience, and to meet the increasing necessities of the public, the Legislature of the State made an appropriation, in July, 1849, for the purpose of erecting an additional wing for the accommodation of fifty patients. This edifice, at the time of the report nearly finished, is one hundred and twenty-six feet long, thirty-six wide, and three stories high above the basement. It is intended for men.

We select the following passage, not only for the truths which it contains, but also for the beautiful style in which it is writen.

"It has always been a striking feature in the whole subject, that every truly well constructed and well managed Asylum for the Insane, in this country, has always been filled with inmates. There is no such thing as *properly* managing the insane, *as a class*, elsewhere, without a cost beyond the means of most in a community like ours. So far as kindness of treatment and safety of person are concerned, there is no doubt that the odds are decidedly in favor of collecting the insane into hospitals. Money may purchase proper attention at home; kindred and affection will never, save in extraordinary instances, render it; they are ties which, sooner or later, give way. *Incurable insanity is but the half-finished work of death.* The destroyer has swept away all save the unhumanized shape, around which affection will not forever linger. This is a truth towards which all experience leads; and its universal recognition, among the philanthropic in both hemispheres, has created the Lunatic Asylum, now an indispensable part of the machinery of human society.

"It is no violation of the principles of duty and affection, that the living should seek to bury the dead from sight; neither should any false conception of the obligations owed the insane require, that those whose services society demands should remain forever in the exhausting contemplation and the vainly attempted preservation of ruins hardly less abhorrent than those consigned to the dust, after the extinction of all vitality.

"The first and best efforts should be used to effect restoration. Failing in that, it is no small boon to avert the progress of mental decay, and throw around

the unfortunate a shield from an exposure at which every sentiment of propriety and humanity revolts."

We have rarely, if ever, seen so faithful a picture of the mental and moral position of the medical officer of an establishment for the insane, as that with which this report closes. As it occupies but little space, we present it without curtailment.

"It is no trivial matter to assume the right to think and act for a body of our fellow-beings, of whose liberty we have become custodians, and whose minutest movements we may be obliged to direct. It is no irresponsible undertaking to impose restraints which, if protracted, may be injurious, or to grant liberties which, if transcended, may prove fatal. It requires no little schooling of the sensibilities to listen patiently, for the hundredth time, to the complaint which has no existence save in the disordered fancy; to parry the request that cannot be granted, and which it is painful to deny; to frame a new reply to the interrogatory that has been and will be repeated with every meeting, however often; to meet the eye, whose every glance is a volume of yet unexpressed suffering, that admits no mitigation. It needs more than human aid to keep unexhausted the fountains of sympathy, and to bear cheerfully a burthen from which night affords no relief. If to walk daily amid scenery like this is the ordinary lot of all who assume the care of the insane, under the most happy circumstances, the case puts on a new aspect, if to this be added the never yet described condition of a *crowded* lunatic asylum. There is then a painful sense of irritation read in every movement and feature of those who are seeking vainly, amid the throng, the disbursement of an overcharged brain, in solitude and silence. Suffering, as it is reflected from one countenance to another, recreates itself, and each reduplication is clothed with new horrors."

	Men.	Women.	Total.
According to the last report of Dr. McF., the number of patients in the Asylum, May 31, 1850, was	69	58	127
Admitted during the year	44	44	88
Whole number admitted during the year . .	113	102	215
Discharged during the year	54	44	98
Remaining May 31, 1851	59	58	117
Of those discharged, there were cured . . .	31	14	45
Died	2	10	12

Causes of Death.—"Insanity of advanced age" 5, epilepsy 2, phthisis 2, dysentery 1, typhoid fever 1, marasmus 1.

The report before us is written with much ability, and is unusually interesting. As our limits deny us the pleasure of extracting all that we might wish, we must confine ourselves to such portions as appear to us of paramount importance.

"The system of lodging patients in associated dormitories, which is adopted in part (in the new building mentioned in the report for 1849), operates favourably beyond our anticipations. It is not contended that the insane, as a body, would be safe, associated with no discrimination, save of sex, in a common sleeping-room. Yet many, either from timidity on their part, or as a protection against self-injury, are more properly lodged in that manner."

The following remarks are valuable in their bearing upon medical jurisprudence.

"It is the most nice point in all the departments of philosophy, to ascertain precisely what effects a given amount of mental impairment will exhibit; or, in other words, to predicate, upon the language, actions, and other general demeanor of an individual, how unsound his intellect may be. This uncertainty obviously lies at the foundation of all the difficulty in fully establishing the legal relations of the insane. The experience gathered here shows that when we thus reason from effects to causes, *we most frequently set the amount of actual disease too low, and that events sooner or later teach us that the degree of mental unsoundness is greater than we anticipated. Instances by the score could be gathered from our case-book, to substantiate this position. Many have been fit in-*

mates, whose appearance and address would have staggered a court of justice, if called on to decide the existence of insanity."

It appears that, in New Hampshire, there are no statutory enactments requiring a legal examination of the mental condition of an individual, previous to his committal to the asylum. The friends of the patient may alone assume the responsibility of thus depriving him of his liberty. The dangers of this state of things are well portrayed in the report, and illustrated by appropriate cases. The basis of a code of laws is then proposed, which would cover the whole ground of the subject, providing for a careful pre-examination of every case of alleged insanity, defining the powers of magistrates and of courts of probate and judicature, in regard to the insane, protecting the asylum, its officers, and the friends of the patients in case of committal, carefully guarding the rights of the patient, defining his responsibility in business transactions, and in civil and criminal suits, his testamentary ability, &c. &c.

In the summer of 1850, Dr. MacFarland visited about twenty of the institutions for the insane in England, Scotland, France, and Italy. Some of the results of his observations are embodied in this report, from which we make the subjoined extracts.

"A visitor to the English and French hospitals is immediately struck with the great evident cost of many of them, compared with the number they are intended to receive. This is no test, however, of their excellence, which, architecturally considered, lies in their spaciousness, the altitude of their ceilings, and the strict attention paid to the details of heating and ventilation. The gloomy interior of most of the American asylums, where the light must be excluded by a mischievous and false economy, finds no parallel in Europe, save in the extremely old institutions of the North, or those of Catholic countries, where an asylum is most frequently a suppressed monastery.

"We (Americans) do not suffer in the comparison (of institutions). Indeed, there is much reason for self-gratulation. Our institutions are better organized; and, if our edifices for the reception of lunatics be not so spacious, we are already alive to their deficiencies, so that there is no obstinate adherence to exploded designs. We have no mischievous precedents, gray with age, to be annihilated. We have no evils to anticipate, like those which hang their weight upon the charities of communities, who, in a thousand other ways, are now paying the debts imposed by the usages of barbarous times.

"Insanity in America is ever presenting to us almost precisely the same aspects. In very old communities, where the lines between different grades of society have been closely drawn for ages; and where contiguous neighbourhoods, from different pursuits, have a distinct character, in no place is the difference more quickly seen than in the lunatic asylum. While the lunatic of Louisiana is almost of the same mould with him of Maine, the plodding agricultural serf of the North Riding of Yorkshire seems, when insane, a totally different being from the coal miner of Durham, or the manufacturer of the West Riding, and each neighbours of but an hour's journey removed."

3. Dr. Bell, in the report of the McLean Asylum, for 1849, says: "The cholera, in its visitation to this section of New England, held one of its strong holds just across our border line; and many of the most intense and virulent cases of this fell epidemic were in the village between us and the city. Yet we were wholly preserved; if there were premonitory indications of the effects of a malarious atmosphere among us, their actual nature was lost sight of in the facility of their yielding to medical agents."

	Men.	Women.	Total.
Number of patients at beginning of year .	77	84	161
Number admitted during the year . . .	77	83	160
Whole number " " . . .	154	167	321
Discharged " " . . .	59	78	137
Remaining at end of year . . .	95	89	184
Of those discharged, there were recovered .	26	38	64
Died	9	6	15

The institution was filled to its utmost capacity for patients during the whole year.

"We have resorted," says the report, "to personal restraints only in some two or three cases, where it was believed that life could not have been preserved without a resort to such aid."

During the thirteen years that Dr. Bell has been connected with this asylum, 1857 patients have been admitted, of whom 948 have recovered, and 199 have died.

From the report for 1850, we glean the following items:—

	Men.	Women.	Total.
Patients at beginning of the year . . .	95	89	184
Patients admitted during the year . . .	80	93	173
Whole number admitted during the year .	175	182	357
Discharged	75	82	157
Remaining at end of year	100	100	200
Of those discharged, there were cured . .	34	44	78
Died	15	13	28
Patients admitted from 1837 to 1850, inclusive			2030
Of whom have been cured			1026
Of whom have died			227

During this period, the average number of patients, annually resident, has gradually augmented from 80 to 201.

By the following extract, it will be perceived that this institution has attained an exemption from one of the most discouraging obstacles with which the physicians of such establishments are generally obliged to contend.

"What was, a dozen years since, one of the most painful and disheartening circumstances in the experience of those in charge—the capricious removal of patients at the most critical and promising stages of restoration, soon to fall back into permanent disease, is now a rare occurrence." This desirable condition of things has been effected principally by a fund contributed by the Hon. William Appleton, the proceeds of which are devoted to defraying the expenses of those patients whose pecuniary means, and those of their friends, are such as to require this assistance. A worthy example, this, to be followed by the wealthy! Nor is this the only instance of the benevolence of the same generous donor. "The recent decision," says the report, "of our munificent friend, the Hon. William Appleton, to continue his course of liberal benefactions to our institution, by bestowing upon us the means (*twenty thousand dollars*) of establishing two distinct edifices, in the neighbourhood of the other buildings, for the accommodation of a class of patients most favoured by fortune, with arrangements more extensive, complete, and commodious than have been before known in this or perhaps any other country, will be an era in the history of the asylum."

A billiard-room, fifty feet long by twenty-five wide and fourteen high, was constructed during the past year; and heating by water, with forced ventilation, has recently been introduced into the whole establishment.

We close the notice of this report with the remarks of Dr. Bell upon the importance of well-endowed institutions.

"As the communities called to provide for the insane advance in familiarity with this duty, and in means to meet it, the fatal error of *cheap* institutions will cease to exist; an error involving not merely the negative objection of leaving the presumptive ends of hospital treatment unfulfilled, but the positive hazard of accidents, compromising not only the institution immediately concerned, but the usefulness and reputation of the whole class. It would be a happy conviction upon the minds of legislators and communities, could they be persuaded that, between no provision at all of a public kind for the insane, and a parsimonious, stinted, and inefficient imitation of a real provision, the former evil is infinitely the least. A county, or town, or State, may dignify a part or the whole of some custodial receptacle for its lunatics, with the high-sounding title of an 'Asylum;' the public and curators of the unfortunate, or even the friends and relatives, may ignorantly, or as an excusing salvo, accept such substitution

as a full acquittance of their obligation; but every person who gives an hour's reflection to the matter, and compares the cost of persons in health, and of the insane under even the minimum outlay for mere custody, to say nothing of amelioration and cure, cannot but see the impossibility of doing justice to the insane on a cheap plan."

4. The report of the Massachusetts State Lunatic Hospital, for 1849, says: "The hospital has been more crowded the past year than ever before. The extent of its accommodations does not exceed what three hundred and seventy-five requires. At no time has there been less than four hundred and five patients. The greatest number was four hundred and forty. The average for the year about four hundred and twenty."

	Men.	Women.	Total.
Patients at beginning of the year . . .	217	192	409
Patients admitted in course of the year . .	134	139	273
Whole number admitted in course of the year .	351	331	682
Discharged in course of the year . . .	131	122	253
Remaining at the end of the year . . .	220	209	429
Of those discharged, there were cured . .	70	68	138
Died	19	18	37

"The diseases usually prevalent in the warm season," writes Dr. Chandler, "prevailed to some extent among our patients and their attendants. Diarrhœa, dysentery, fever, and a few cases of the graver forms of cholera morbus, and cholera, with all its characteristic features, occurred among our household in the month of August. By strict and immediate attention to the first indications of diarrhœa and the forming stage, only eleven cases, all of which were among the male patients and their attendants, took on the more severe and unmanageable symptoms of cholera. Four died very suddenly of this mysterious scourge. Three of them had become debilitated by long and incurable disease, and the fourth, although he was fleshy and laboured much in the open air, was in the habit of drinking enormous quantities of cold water. All through the summer, we took the precaution to place fires in all the furnaces whenever the weather was cool or damp.

"It is somewhat remarkable that the inmates of this hospital should be almost entirely free from all bowel complaints until about the first of August; that these diseases should then commence and become more and more prevalent and more fatal up to the third of September, and that they then should suddenly cease as an epidemic. Since that time we have been happily relieved of any great amount of sickness among our patients; but there have been several cases of typhoid fever among the attendants.

"On the 19th of March, one of our attendants became sick with the measles. Three successive *crops* of this disease succeeded. Thirteen attendants, eight patients, and my two daughters had it. The last of the fourth crop became sick on the 30th of April following. It was noticed that the attendants—those who were supposed to be in better health than the patients, and who were capable of taking more rational care of themselves, had the disease, almost uniformly, in a more severe form, and apparently suffered more from it than the patients. In the forming stage of the disease, the patients lived in a more uniform temperature and were less exposed to the vicissitudes of the season than the attendants."

Cases of mental improvement, caused by attacks of insanity, have heretofore been recorded by several writers. Dr. Chandler says: "I have known a few individuals who were brought here insane, and who recovered to become better citizens than they were before. Their minds and feelings acquired strength and soundness by the disease and by undergoing the process of cure, as some musical instruments are said to be improved by being broken and repaired again.

	Men.	Women.	Total.
By the report for 1850, it appears that the number of patients remaining Dec. 1, 1849, was	220	209	429
Admitted during the year	129	112	241
Whole number	349	321	670
Discharged	120	109	229
Remaining Nov. 30, 1850	228	213	441
Of those discharged, there were cured	60	65	125
Died	29	28	57
The whole number admitted from 1833 to 1850, inclusive, a period of eighteen years, is	1818	1780	3598
Of whom have been discharged, recovered	818	876	1694
Died	199	167	366

Causes of Death.—Marasmus 61, apoplexy and palsy 43, consumption 39, epilepsy 38, disease of heart 18, suicide 17, disease of brain 17, typhus fever 10, lung fever 12, hemorrhage 5, dysenteric fever 8, cholera morbus 4, inflammation of the bowels 4, mortification of limbs 3, dropsy 6, chronic dysentery 4, erysipelas 12, diarrhœa 16, disease of brain from intemperance 2, bronchitis 3, old age 5, gastric fever 4, land scurvy 1, congestive fever 2, concussion of brain 1, disease of bladder 1, fright 1, rupture 1, exhaustion 19, convulsions 2, cholera 4, asthma 1, hydrothorax 1, cancer 1.

The report says, that, during the last year, "we have had nothing like an epidemic, unless about twenty-five cases of erysipelas, which occurred in the spring, may be so called. These cases made their appearance from the last of February to the first of June in a majority of the wards, without being in any instance contagious. No cause can be assigned with any certainty for their breaking out then, more than at any other time. The inflammation was, in a majority of cases, confined to the head and face, and when the disease extended to the body it was apt to be fatal." Five patients and one female assistant died of it. "It was noticed that those patients who occupied rooms nearest our hot-air furnace, and were consequently the warmest, were most liable to its attack."

Epilepsy "is very often one of the prominent symptoms (attendants?) of insanity brought on by habitual intemperance; and where it is so, fatal results follow in a short time."

The table subjoined exhibits some not unimportant facts in relation to twenty-eight epileptic patients who have died in this hospital.

	Average insanity before admission.	Average residence in hospital.	Average age at death.
23 men.	36 months.	13½ months.	42 years.
5 women.	60 "	14 "	38 "

"The number of males afflicted with epilepsy in this hospital is greater than that of females. The males died at the most advanced age, but they may have been, and probably were, attacked with epilepsy later in life than the females.

"The accession of the fits of epilepsy are very irregular as to time and severity in different persons. Some have one or two fits every day or two. Some have ten or twenty in quick succession, and are much disturbed in mind for several days, to be followed by an interval of some weeks or months of freedom from fits, and by serenity of mind. Some are seized only while asleep, and others only while awake. In some, the fits amount only to slight dizziness, which hardly takes away consciousness. In others, all the senses are locked up for the time, and the physical system is racked with convulsions horrid to behold. As a general thing, these persons are unconscious at the time of the fit, and, after apparently suffering the most frightful tortures, wake up and inquire of those around them what has happened. A very few have a short warning of the coming on of a fit, but generally they know nothing of it except as they are told by others. Most epileptics enjoy the pleasing delusion, that their fits are constantly becoming lighter and more unfrequent.

"The management of them should be kind and conciliating. About the time

of having fits they are irritable, jealous, and easily provoked to violent actions. They will not be driven, but must be flattered. They should have exercise, but should never get fatigued. Their diet should be sparing, but nutritious. They should never overload the stomach or become surfeited.

"But little can be done in the way of medical treatment. In slight cases, stramonium, nitrate of silver, and sugar of lead have some reputation. In a few cases, *unconnected with insanity*, a mitigation and a cure even have followed their protracted use."

Heating by steam has been introduced into a part of the establishment, and lighting by gas into the female department.

The average number of patients, during the last year, was 440.

5. From the second annual report of the Butler Hospital for the Insane, at Providence, R. I., we learn that the number of patients at that institution:—

	Men.	Women.	Total.
January 1, 1849, was	56	44	100
Admitted in the course of the year . . .	42	51	93
Whole No. admitted in the course of the year .	98	95	193
Discharged in the course of the year . . .	47	39	86
Remaining Dec. 31, 1849	50	57	107
Of those discharged, there were cured . .	24	11	35
Died	11	9	20

Causes of Death.—Dysentery 4, acute mania 4, chronic mania 7, epilepsy 1, disease of heart 1, abscess 1, intestinal perforation 1, pulmonary disease 1.

"I need hardly say," remarks Dr. Ray, "that a general summary of results like this conveys but a very inadequate idea, to most persons, of the amount of good accomplished in a single year, by a hospital for the insane. To how few can the simple statement that so many have recovered, give any idea of the peculiar joy experienced by those who have seen the cloud of disease lifted from their spirits, and the undimmed light of reason shining serenely out upon their mental horizon! The hours of mental torture that have been soothed, the crushing burden of distrust and apprehension that has been lightened, the joy of those—the husband, father, child—who welcome the return of the loved one as from the grave; the relief of that desperate agony, which, day after day, has been aggravated by the appalling sights and sounds that often crowd upon the shattered mind, the restoration to the domestic circle of peace, order, and quiet, that has followed the withdrawal of some uneasy spirit, whom none of the arts of kindness could please or soften—these are benefits that cannot be estimated by figures, though not among the least conferred upon a community by establishments like ours. Neither are words more adequate to the purpose, because those benefits lie too far beyond the range of ordinary experience to be conceived of by any who have not personally seen and felt them.

"It will be noticed that four of the deaths were produced by dysentery. In this, as in many other parts of the country, cholera was immediately succeeded by dysentery, which prevailed with a degree of severity not experienced for many years. The former we fortunately escaped altogether. From the latter, however, no advantages of diet, ventilation, or cleanliness could entirely save us, although they probably rendered the disease of a milder character than it presented in the neighbourhood. The whole number of cases was nearly forty, besides several among our attendants and domestics."

Dr. Ray remarks that he believes the proportion of foreigners among his patients is much larger than it is in the sane population, that they are less curable than Americans, and that this fact has been observed in other institutions. He alludes to the difficulties in treating them, and appears to approve of the construction of hospitals specially intended for them. He thinks the difficulties in treating them arise, at least in some measure, from the "inability to approach them in a proper way." We infer from his remarks, that he would have the officers of the special hospitals referred to foreigners also, or at least, more intimately acquainted with the language, idioms, modes of expression, manners, customs, and religious faith of the patients. We have no doubt that

great advantages would result from such an arrangement, but the obstacles in the way to its attainment are various and great.

	Men.	Women.	Total.
According to the report for 1850, the number of patients at the beginning of the year was	51	56	107
Admitted during the year	38	35	73
Whole number	89	91	180
Discharged	38	29	67
Remaining, December 31st, 1850	50	63	113
Of those discharged, there were cured	12	7	19
Died	7	9	16

Causes of Death.—Acute mania, four; chronic mania, four; meningitis, three; "Bell's disease," (typhoid mania?) one; consumption, one; epilepsy, one; disease of heart, one; general paralysis, one.

"Many of those who died had gradually approached the extreme limit of life, and ceased to exist less in consequence of any particular organic lesion, than *that gradual consumption of the vital forces which results from chronic insanity.* This disease conducts its victims to the tomb by a series of changes, as secondary and subordinate to that of the brain as the colliquative diarrhœa that closes a case of consumption; and, *in the latter instance, to say that the patient dies of diarrhœa would convey as false a representation of the fact, as to say, of many of those who die insane, that their death is caused by diarrhœa, or marasmus, or exhaustion, because one or the other of these disorders happened to be the last obvious member of a series of morbid changes, the first, most efficient and characteristic of which had its seat in the brain.*"

In Rhode Island, as in New Hampshire, there are no sufficient laws authorizing the commitment of the insane to public hospitals. Dr. Ray thus writes upon the subject:—

"Our appropriate duties are performed rather by sufferance of public sentiment than any sanction of law, and thus we constantly lie at the mercy of excited passion and prejudice. The actual practice is, for those who stand in the nearest relation to the insane person, to place him in charge of an institution, and give the necessary obligations for his support. No one, certainly, can deny that this is right and proper, and in many cases it meets every practical requisite. The person is correctly considered insane, and he quietly submits to the measure. On recovery, he recognizes its propriety and gives it his grateful approval. But, in cases of a doubtful character, there should be a provision for some authoritative judgment, and especially in that class of cases where the person regards not only the deprivation of his liberty as the grossest outrage upon his rights, but is in a position, sooner or later, to seek redress for his fancied injuries. The probability of being involved in litigation would often induce one to forbear to interfere, even while every other consideration called for his interference. At any rate, the law, whatever it is, should be clearly defined, and should meet the difficulties experienced in the exceptional cases. The common law sanctions no confinement of the insane, except on the score of their safety, or that of society; and our statutes are silent upon the subject. For any other purpose, the measure is at the peril of those who seek it. True, it seems almost incredible that people should be punished for doing what common sense and common humanity prompted them to do; but it has happened, and may happen again, that an insane person believing, or affecting to believe, that his confinement was grossly unjust, though it resulted in his partial recovery, has resorted to the law for redress; and, by setting up false issues, and making artful appeals to the popular sympathies, has succeeded in convincing a jury that he was a much injured man, and obtained from them a verdict of vindictive damages."

The report contains some very reasonable remarks upon the very unreasonable requirements of many people, in regard to the treatment of their friends by the officers and their assistants in public institutions. After mentioning the safeguards which are thrown around the patient, it continues: "In these facts will be found a guaranty against improper practices, and, upon a broad estimate of the ordinary rules of action that govern men, it would seem to be a sufficient

one. But it would be as idle to suppose that, in some mysterious way, the moment people are entrusted with the charge of the insane, they become transformed from men and women into angels; as that, on the other hand, they should systematically pursue a course opposed by every influence around them. There are exceptions to all general rules; imperfection and short-coming are incident to everything human; and if, occasionally, an attendant should so far forget or disregard his obligations as to utter a harsh word, or use unnecessary force, no sensible man would consider the fact as enough to outweigh the numberless benefits conferred by these institutions. To expect that a young person, without any extraordinary moral endowments, or any special preparation for the duty, *can bear, day after day, and hour after hour, week in and week out, the incessant and systematic efforts of one whose power for mischief is only heightened by disease, to teaze and irritate him, and never lose his patience, is to expect a phenomenon not often witnessed in any other department of life.*"

We once knew of the reception into an asylum of a woman whose relatives would consider the insinuation that they were not *respectable* as an unwarrantable insult. Her sister was very particular in requesting that she might be treated with all possible kindness, tenderness, and consideration. In her subsequent visits to the institution, she was never weary in the endeavor to ascertain whether this humane course was ever departed from. In a few months, the patient, appearing to be incurable, was removed, at the request of this sister, who now assumed the care of her. Forty-eight hours had not elapsed, after the removal, before the two had a regular *set-to*, which would have honored the combatants of the ring, with such fisticuffing, scratching and pulling of hair as is not to be seen every day in well regulated and affectionate families.

6. The principal statistics of the Hartford Retreat for the Insane, for the year ending March 31st, 1849, are as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	59	63	122
" admitted in course of the year . .	49	84	133
Whole number " " . .	108	147	255
Discharged " " . .	47	75	122
Remaining at end of the year . . .	61	72	133
Of those discharged, there were cured . .	20	50	70
Died	7	5	12
Daily average number for the year . . .			141

Causes of Death.—General debility 3, marasmus 2, exhaustion 2, phthisis 1, "disease of brain" 1, "disease of lungs" 1, erysipelas 1, suicide 1.

Dr. Butler relates the following case in this report: "A. B. of C. was brought into the institution in 184–. The following is the history of the case, as given by the intelligent gentleman who brought him to the Retreat. B. is 36 years of age, and has been insane twenty years. When young, he was considered, in point of intellect, quite equal to most boys of his age, and was fond of reading and of mathematical studies. From some unknown cause he became a violent maniac, destroying everything in his way, and dangerous. The family became afraid of him, and chained him in a room or pen, partitioned off from the stable, in the barn. He would tear his clothes and any bed-clothing provided for him, so that he would often be entirely naked, the coldest nights in winter, without appearing to suffer by exposure. His usual dress was nothing more than a coarse flannel frock, and without anything for a bed but loose straw. He remained in this state for years, when his father, becoming poor, called upon the town for help. The select-men went and found the man as described, and consulted with the father as to what should be done. Their conclusion was, that, if the father had kept him in a barn, it would not be improper for the keeper of the paupers to do the same.

"Accordingly, he was removed from place to place, as the paupers were changed, and kept as his father had kept him. He was generally fed as we feed swine, had nothing but his hands to feed himself with, and, as all his filth remained in his stable for many days, it was *a fearful job to attempt to clear it out*, as the saying was. He was in an out-building, and without fire, for the

twelve or fifteen years that he was supported by the town. He was in a sitting posture so long that the cords of the legs contracted, so that his knees are drawn up to his breast, while his legs are drawn close to his body. He is entirely negligent of the calls of nature.

"He is now," continues the report, "in the Retreat, demented; is always cheerful and docile, takes his meals regularly, and is cleanly in his habits and person. His lower limbs are closely contracted upon his body, and he accomplishes locomotion, with a good deal of agility, by placing his hands on the floor and swinging his body along."

From the report for 1849, we glean the following items:—

	Men.	Women.	Total.
Patients at the beginning of the year	61	72	133
Admitted in course of the year	60	75	135
Whole number	121	147	268
Discharged	48	77	125
Remaining, April 1st, 1850	73	70	143
Of those discharged, there were cured	17	47	64
Died	17	13	30
Daily average number for the year			143

"The number of recoveries is larger than that of any previous year excepting the last, and this number would have been increased by the addition of several cases from among those reported as more or less improved, but for their ill-advised and premature removal from the institution.

"During the months of August and September," says the report, "we were visited by the same malarious influence which pervaded the valley of the Connecticut, as well as most other sections of our country. Though spared by a merciful Providence, from the ravages of the cholera (not a case of which has ever occurred in the institution), we had a large number of cases of diarrhœa and dysentery. The former yielded readily to treatment in nearly every case, and was fatal in none; while the latter appeared in a very severe and malignant form, and was very difficult to control. It proved fatal in the cases of eight patients and one attendant. The whole number of cases among the patients was forty-seven; twenty-two females, of whom four died, and twenty-five males of whom four, also, died. Among the attendants there were eight cases, of whom one died.

"At different times during the year or two past, an epidemic erysipelas has prevailed in this city and vicinity, in a form of unusual severity. With a single exception, in the month of July last, no cases have occurred in the Retreat until last January, during which, and the two following months, we had twelve cases, of whom six died. *All* of these were old and incurable cases, and, with a single exception, were the most infirm and debilitated patients in the institution.

"In addition to the preceding deaths from epidemic diseases, there have been fifteen others (about the usual proportion of preceding years), from the following diseases; two of consumption; three of general debility; two of general paralysis; and one, each, of apoplexy, old age, paralysis, marasmus, disease of the heart, chronic diarrhœa, and dropsy; and one of exhaustion, an acute case complicated with febrile disease, and aggravated by the fatigue of travelling—an unfit case for the institution."

	Men.	Women.	Total.
According to the report for 1850, the number of patients at the beginning of the year was	73	70	143
Admitted in the course of the year	56	72	128
Whole number	129	142	271
Discharged	57	57	114
Remaining April 1st, 1851	72	85	157
Of those discharged, there were recovered	25	34	59
Died	9	6	15
Daily average number for the year			151
Seven years ago, the same average was			84

During that period, the annual admissions have increased from 80 to 128.

Causes of Death.—Dysentery 4, exhaustion 3, general debility 2, apoplexy 1, epilepsy 1, old age 1, suicide 1, general paralysis 1, erysipelas 1.

"Twenty-six of our patients were removed from the Retreat during the year, in different stages of improvement. Some of them were slowly but surely recovering." In a general allusion to discharges of this kind, the report says: "The history of some of these premature and ill-advised removals is very sad. Many have relapsed into an incurable state, while others remain half-crazed, or nervous invalids, and will probably remain so for life."

Much of the increase in the number of patients, during the last seven years, is stated to have been the result of an appropriation, by the State, for the support, at this institution, of such lunatics as are unable to bear the expense. This fund was $2,000 in 1842, but was increased to $5,000 in 1843, at which sum it is still continued.

For many years past, the Rev. T. H. Gallaudet, one of the purest philanthropists of the age, has been connected, as chaplain, with the Hartford Retreat. With intellectual powers far above mediocrity, a heart overflowing with kindness, and a spirit ever rejoicing in whatever may contribute to the improvement of the physical or moral condition of any portion of his fellow-men, he was adapted, in a degree almost without parallel, for the situation whose duties he so honorably, faithfully, and usefully fulfilled.

The annual report of the physician to this institution has generally been accompanied by one from Mr Gallaudet. That which is before us is his last—for since its publication, the institution, and the public, have suffered the necessary loss resulting from his death. The following extracts from this report is worthy of attention.

"In appreciating the benefits of institutions for the insane, regard is too much had simply to the cure or relief which they afford; and their utility is too often measured only by the amount of good thus effected. This is, indeed, their great object; and if this alone is considered, they have claims upon public bounty and private benevolence, than which none can be greater among the various forms of suffering humanity.

"But the many *collateral* advantages of such institutions are apt to be overlooked. If conducted by wise and observing individuals, they furnish the means of shedding clearer light upon questions of deep and general interest connected with the philosophy of mind, and the reciprocal influence which the mind and the body have upon each other—the elements of moral science—the education and training of children and youth, both in families and schools—the laws of hereditary physiology—the preservation of health and reason—prison discipline—criminal jurisprudence—and the precautionary measures to be pursued, to guard against many of the ills of the flesh and of the spirit—and then, of diffusing this light for the benefit of the whole human family.

"Such institutions ought to feel their responsibility in these respects, and be so conducted as to meet this responsibility. The light which they get should not be hid under a bushel. They occupy a position which can fit them to take rank among the greatest benefactors of mankind. The ills which they can be instrumental in *preventing*, outnumber and *outweigh*, thousands of times, those which, having already taken place, they are privileged to mitigate or remove.

"My mind has been turned to this subject from noticing, after thirteen years' experience as chaplain of the Retreat, what *a school of practical wisdom* it may be, and often is, not only to those who are placed for a time under its care, but also to their relatives and friends. They learn much of themselves, and not a little, in this respect, which they never knew before, much from their companions in misfortune, and much which they could never get from books or the common intercourse of society.

"They get new and more correct views of human nature; of what they should live for, and of the means of preserving a sound mind in a sound body, without which the great ends of life can be but very imperfectly, if at all, accomplished."

7. The Report of the Bloomingdale Asylum for the Insane, for 1849, is the first issued by Dr. Charles H. Nichols, who succeeded Dr. Earle, as physician to the asylum, in the spring of the year mentioned.

	Men.	Women.	Total.
The number of patients, Dec. 31st, 1848, was .	59	60	119
Admitted in the course of the year . . .	58	37	95
Whole number " " " . . .	117	97	214
Discharged " " " . . .	54	36	90
Died " " " . . .	13	8	21
Remaining Dec. 31st, 1849	50	53	103
Of those discharged, there were recovered . .	26	18	44

Causes of Death.—Pulmonary consumption, 4; "typho-maniacal delirium," 2; "apoplectic symptoms, occasioned apparently by a sudden increase of old serous effusions into the inter-cranial cavities," 4; "gradual exhaustion preceded by dysentery," 3; gradual exhaustion attended with diarrhœa, 4; suicide, 2; cancer, 1; delirium tremens, 1.

"In the fact that, among at least fifty persons with constitutions in a state of general decay, and offering but little resistance to epidemic agents, *no case of cholera occurred*, and but few cases of dysentery, though the former disease prevailed to some extent, and the latter very generally in the neighbourhood, is abundant evidence, if any were needed, of the salubrity of the site of the asylum."

Seven of the recoveries were cases of *inebriety*. "In nearly every case of intemperance received here," says the report, "the habit has existed, either continuously or periodically, for many years; and the individual has suffered numerous attacks of delirium tremens, or other sickness arising from drink; and every means but prolonged restraint has been exhausted to induce him to forsake the path to destruction in which he has so far advanced, but in vain; and at last delirium and stolidity are the only varieties of mental condition known to his experience, and he is totally unable to protect his interests or his person.

"The habit of intemperance is usually entered upon with the consent of a free will, and generally deserves to be treated as a vice; but my observations are confirmatory of the belief of Esquirol, Ray, and others, that, in the cases just described, a pathological state of the brain has been gradually induced, to which the will is wholly or in part subject; and I think physicians and magistrates need not scruple to grant the lunacy warrant, which we require in every description of case received here."

The following remarks upon moral treatment are very correct; but the grand *practical* difficulty is, to find amusements in which all the patients, or even a very considerable number of them, can join "as equals, if not principals."

"It has struck me that there is a material difference in value of what may be termed, in reference to the individual under care, the *active* and the *passive* modes of *moral* treatment. An amusement, a lecture, or a religious exercise which a patient witnesses merely, will often attract his attention, and thus, in a greater or less degree, suspend those morbid modes of mental action it is our object to eradicate; but if he himself takes an active part in the exercise going forward, his interest is enlisted on more self-respecting, not to say ambitious grounds, and is therefore more awakening and absorbing; and, as he has become an actor in a scene which suffers more or less interruption when he ceases to perform his part, the healthy mental effort is necessarily deeper, less divided, and more confirmatory of itself. In devising amusements for our patients, therefore, I have given preference to those in which they could participate as equals, if not principals. As, for digestion, it is better to walk than to ride, to saw wood than to see it burn; so, for the substitution of sound for deranged cerebral action, it is better that the patient should himself execute even poor music, than hear the best executed by another; that he should constitute the eighth of a cotillon than be the mere spectator of a score; that he should read aloud to others, than that he should be trusted to listen."

	Men.	Women.	Total.
The report for 1850, states that the number of patients in the Asylum Dec. 31, 1849, was .	50	53	103
Admitted in course of the year . . .	51	46	97
Whole number	101	99	200
Discharged	39	33	72
Died	12	6	18
Remaining December 31, 1850	50	60	110
Of those discharged, there were cured . .	28	22	50

Of the cures, 10 were cases of uncontrollable inebriety. *Causes of death.*—*Paralysie générale* 4, chronic melancholia 4, epilepsy 3, chronic mania 2, anasarca 1, phthisis 1, ascites 1, hemipligia 1, suicide 1.

"We have had no epidemic and no acute disease, or, at least, none that proved fatal in its first stages. In those instances where a more specific cause is not assigned, death was the inevitable and awaited final issue of a gradual deterioration of the organism, consequent upon long-continued derangement and deficiency of innervation."

Our extracts from this Report will be limited to a single additional one, corrective of an opinion very generally entertained among the people.

"It is often queried whether the separation of insane persons with sensitive minds from the family circle and endearments, and their commitment to the care of strangers, will not be attended with a sort of shock to the nervous system, and thus greatly aggravate the mental distress and aberration, and whether it be suitable that a number of such persons should be associated in a greater or less degree; but I believe it to be the uniform opinion of those experienced in this speciality of the medical profession, that the injurious effects of removal to an asylum, sometimes apprehended, never occur; and that the association of the insane, if there be a proper classification, very often essentially promotes recovery, and is attended with no objections whatever. No points in the management of nervo-mental diseases are better settled than these, and, if necessary, are capable of copious and very conclusive illustration."

We defer our notice of the reports of other institutions until our next number.

P. E.

Art. XV. *An Analytical Compendium of the Various Branches of Medical Science, for the Use and Examination of Students.* By John Neill, M. D., &c., &c., and Francis Gurney Smith, M. D., &c., &c. Second edition, revised and improved. Philada., Blanchard and Lea, 1851: 12mo. pp. 1000.

This second edition of Drs. Neill and Smith's excellent manual of the several branches of medical science has received at the hands of its authors such revisions, additions, and alterations as were necessary to adapt it to the purpose for which it was intended—to supply, namely, for the use of the student, a faithful compendium of the existing facts and opinions in reference to anatomy and physiology, surgery, obstetrics, materia medica and therapeutics, chemistry and the practice of medicine.

Works of this kind, when restricted to their proper uses—as a mere aid to the student in the prosecution of his labours—as a digest of the knowledge to the acquisition of which his mind has been devoted—recalling to him such facts as may not have been sufficiently impressed upon his memory, and correcting any misconceptions he may have imbibed in regard to others—are not without their advantages. Those who may stand in need of such a remembrancer will do well to supply themselves with the very accurate analytical compendium of Drs. Neill and Smith. For all the legitimate purposes for which a work of this class is adapted, we know of none superior and few equal to it. It is well arranged, and comprises a faithful digest of the leading branches of medical science, a clear exposition being presented of the elements of each, concisely expressed—in conformity with the character of the work as a manual for frequent reference—but with sufficient clearness to convey to the reader correct and definite information.

D. F. C.

Art. XVI. *Outlines of the Arteries: with Short Descriptions.* Designed for the Use of Medical Students. By John Neill, A. M., M. D., Surgeon to Wills' Hospital, Demonstrator of Anatomy in the University of Pennsylvania. Second edition. Philadelphia, Ed. Barrington and Geo. D. Haswell, 1852: pp. 28, plates 7.

Outlines of the Nerves: with Short Descriptions. Designed for the Use of Medical Students. By John Neill, M. D., &c. &c. Second edition. Philadelphia, Ed. Barrington and Geo. D. Haswell, 1852: pp. 28, plates 9.

We take pleasure in calling the attention of those commencing the study of anatomy to these two small volumes. The student will find them to present him with a simple, concise, and lucid representation of the arteries and nerves, arranged on a plan well calculated to facilitate his labour in acquiring a knowledge of these important parts of the organism.

Art. XVII.—*The Microscopic Anatomy of the Body in Health and Disease.*—Illustrated with numerous drawings in colour. By Arthur Hill Hassall, M. B., F.L.S., &c. &c. With additions to the text and plates, and an introduction containing Instructions in Microscopic Manipulation. By Henry Vanarsdale, M.D. In two vols. New York, Pratt, Woodford & Co., 1851: pp. 560–168, plates 76.

Having already noticed the original edition of this work (see No. for July, 1850), and expressed the opinion that it was the best epitome of the microscopic anatomy of the human body in the English language, it will be quite sufficient to say, in regard to the present reprint, that it is as well executed as the London copy, and that its value is much increased by the labours of the American editor.

Dr. Vanarsdale has written an introduction furnishing instruction in microscopic manipulations, made various additions to the text, and introduced ten plates. Most of these plates are original, and from the human subject.

The editor states that, "For some of the specimens illustrating certain points of anatomy which have been figured, he is indebted to Mr. Hett, of London, so well known to microscopists for his beautiful preparations of healthy and diseased structures. For other subjects of value, to Drs. Neill and Goddard, of Philadelphia, whose minute injections have equalled the best foreign ones."

We strongly recommend this work to the student in this department of medical science.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Influence of the Sympathetic and Intra-cranial Nerves on the Motion of the Pupil.*—Prof. Julius Budge and Augustus Waller have discovered the very interesting fact, that irritation of the cervical trunks of the sympathetic nerve, by means of the magneto-electric machine, produces an extraordinary dilatation of the pupil; and this alike in the rabbit, in which this trunk is isolated from that of the pneumogastric, and in the cat and dog, in which the two trunks are united. The phenomenon, they remark, is as constant as the contraction of the leg when the sciatic nerve is galvanized. Thus is explained the permanent contraction of the pupil after section of the sympathetic nerve in the neck, which was first observed by Petit in 1712, but which, though subsequently verified by other observers, has never led to more than a surmise that the cervical portion of the sympathetic might afford the dilating power. By galvanizing the third pair and the cervical sympathetic alternately, alternate contraction and dilatation of the pupil are produced; but with this difference, that the *contraction* is immediate, as is also the return of the iris to its previous state after the irritation is withdrawn, whilst on the other hand, the *dilatation* requires some seconds to attain its maximum, and the subsequent return of the iris to its previous condition is slow. Moreover, the third pair loses its power of conducting irritation after being several times excited in this manner, and also very soon after death; whilst the sympathetic retains it longer.

The authors next applied themselves to determine the precise centre of this power, and they ascertained, in the first place, by galvanizing the undivided trunk in the rabbit, that irritation of any part of the cervical portion of the sympathetic, from the first to the last ganglion inclusive, would produce this result; but that below the last cervical ganglion, no such effect could be produced by irritation. On exposing the spinal cord, they found that irritation of any part of it between the first cervical and sixth dorsal vertebræ (which they hence designate the *cilio-spinal* region) would produce dilatation of the pupil; but that the effect was most decided in the centre of this region, the maximum being at the junction of the second and third dorsal vertebræ, and decreasing in intensity on passing towards either of its limits. When both of the sympathetic trunks are entire, irritation of this region produces contraction in both pupils equally; but when one of the sympathetic trunks is divided the dilatation does not take place on that side; and if both be divided, no irritation of the spinal cord produces any effect on the pupil. It is sufficient to irritate one side of the spinal cord only, to produce dilatation of both pupils; but if the spinal cord be divided longitudinally, and the two halves be kept asunder by a slip of glass, irritation of one side then acts only on the pupil of that side. When the spinal cord is divided transversely at different points, it is found that irritation of any part that is isolated from the centre of the *cilio-spinal* region is unproductive of effect. When the spinal cord was removed, and the galvan-

ism was applied to the dura mater lining its canal, this limitation was still more precise; for it was then found that in no other point was any effect produced, than at the intervertebral space between the second and third dorsal vertebræ. Thus it seems obvious that the motor fibres on which this action depends issue from the spinal cord with the second dorsal nerve; and this corresponds with the results of dissection, as compared with the lowest limit of the influence of the sympathetic trunk over the movement of the pupil. All the causes which diminish muscular irritability after death, such as imperfect nutrition of the animal lesions, of the medulla oblongata, &c., diminish or destroy the power of the cilio-spinal region over the pupils; and in all cases it is to be noted that after death the power gradually recedes from the extremities of the cilio-spinal region towards its centre.

The authors then proceed to study the action of the inter-cranial nerves; and, in the first place, that of the fifth pair, respecting which there has been so much contrariety of opinion. In order to remove all sources of fallacy so far as possible, they have divided all the other nerves connected with the eye (including the cervical sympathetic); and they have then found that sections of the ophthalmic branch of the fifth pair, or of the trunk from which it is given off, causes a slow and gradual constriction, which does not commence for a minute or two after the section, and does not attain its maximum for as much more. The constriction is very decided, the pupil being reduced from three lines in diameter to one. If, instead of division of the nerve, mechanical or galvanic irritation be applied to it, the same effect is produced, but in a less degree. The constriction is in no way permanent, but departs gradually. After section of the optic nerve, section of the third pair does not produce any change in the diameter of the pupil. The fourth and sixth pairs, moreover, have not appeared to the authors to possess any influence over the movements of the iris. If the cervical sympathetic be galvanized without waiting for the gradual departure of the constriction produced by the section of the fifth pair, it is found to be powerless to overcome this constriction. If, moreover, the fifth pair be exposed and its trunk be divided progressively from the centre towards the eye, it is found that so soon as the section is carried in front of the anterior portion of the Gasserian ganglion, the power of the sympathetic over the pupil is entirely lost. Hence it seems evident that the sympathetic fibres which have this function, pass through the Gasserian ganglion; and by other experiments it may be shown that they form part of the ophthalmic division of the fifth pair.—*Brit. and For. Med.-Chir. Rev.* Jan., 1852, from *Gazette Médicale de Paris*, Nos. 41 and 44, 1851.

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2. *On the Causes of the Appearance of Sugar in the Urine.* By M. Claude Bernard.—Since the year 1848, when I first made public, at a meeting of this society, my researches in regard to the origin of sugar in the animal system, and on the production of saccharine urine by irritating a particular point of the medulla oblongata, my experiments have occupied the attention of many chemists and physiologists, partly with a view of testing their results, and partly to find out, if possible, an explanation of them. It will be remembered that after having demonstrated the existence of an animal function previously unknown, the *glucogénie* or formation of sugar within the proper tissue of the liver, I proved that it was directly under the influence of the nervous system. Having moreover established that, in the adult animal, the saccharine matter appeared to be secreted, and again to be destroyed in the organism in proportion to the intensity of the respiration, it was natural to suppose that the presence of sugar in the urine of those animals, in which I had wounded the medulla oblongata, was the result of an incomplete combustion in consequence of a decreased energy in the activity of the respiration. This hypothesis was strengthened by another fact discovered by me, that this same variety of sugar is found in the urine of the fœtus as also in the amniotic and allantoid liquids. Nevertheless, I have always rejected this purely chemical explanation, admitting another more physiological, namely, that the irritation and excitement of the nervous system causes a larger quantity of sugar to be secreted in the liver than can at the time be consumed;

consequently the excess passes off in the urine exactly as happens when we inject into the jugulars too large a quantity of *glucose*.

Very recently, some observers have attempted to support the chemical theory of the incomplete combustion of sugar as the cause of its appearance in the renal secretion, by announcing that etherization and those causes which diminish the respiration by producing asphyxia would make the urine diabetic. Although acknowledging these results to be interesting and important, yet I cannot think that they prove that the passage of the sugar into the urine depends upon an incomplete combustion in the lungs. In fact, one of the most certain and most powerful means to diminish the respiratory energy, consists in cutting the two pneumogastric nerves as they pass down the neck; and, although I have repeated over and over again this operation during a series of years, yet have I never seen it cause the appearance of saccharine urine. On the contrary I have noticed, and so taught, that it causes it to disappear even in the tissue of the liver itself. This is, moreover, the case with many other asphyxiating causes. I am, therefore, of the opinion that the ether and the other agents employed do not cause the production of sugar as asphyxiants, but by acting especially as modifiers of the nervous system. I intend shortly to explain in my forthcoming publication the mechanism of this sort of artificial saccharine diabetes which I have produced not only by irritating the medulla oblongata, but also by a number of other asphyxiating causes very different in their character, such as by certain cerebral commotions; by the action of the poison *curare* with pulmonary insufflation, &c. I hope to be able to demonstrate that, in all cases where the sugar appears in the urine, there is one common essential cause, the excitation of the great sympathetic nervous system.

I will add in conclusion, that it is a mistake to suppose that, in my experiments, I wound the medulla oblongata so as to diminish the respiration by cutting it at the point which M. Flourens designates *le point vital*, and which presides especially over the respiratory phenomena. On the contrary, the point I prick with the knife to determine the passage of the sugar into the urine is much higher up; and I would mention that, when the *point vital* is injured, not only does it not cause the urine to be diabetic, but it produces the disappearance of the saccharine secretion even in the parenchyma of the liver itself.—*Compte rendu des Séances de la Société Biologique*, in *La Gazette Médicale de Paris*, of Feb. 1, 1852.

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3. *On the Influence of the Great Sympathetic over Sensibility, and over Calorification.* By M. Claude Bernard.—1. *Influence over Calorification.*—It has been known for a long time that the resection of the medulla spinalis, or of certain nervous trunks, such as the par vagum, the sciatic, &c., cause a general or a partial decided depression of the temperature of the body; but I wish to show that it is the reverse of this phenomenon which is exhibited by the great sympathetic.

I have noticed in making a resection of the cervical sympathetic branch which unites the cervical ganglions, that there was immediately an augmentation in the heat of the corresponding side of the face, which could be very easily appreciated by the hand. On placing the thermometer in the ears and nostrils of the animal, it was found that the temperature of the side on which the operation had been performed was from 4° to 6°, Centigrade, higher. This experiment, which gave me the same results in the dog, in the horse, and in the rabbit, is particularly easy to repeat on the last, owing to the separation of the pneumogastric from the grand sympathetic. When the superior cervical ganglion of the great sympathetic is extirpated, the same effect is produced, sometimes with even greater intensity. In fact, the energy of the phenomenon is in general in proportion to the force of the animal; it is less marked in animals weakened from any cause. At the same time that the heat is increased in the particular parts, the circulation becomes more active there, as is very evident in the ears of the rabbit on which I experimented before the society. I will hereafter give an explanation of this modification of the circulation, considered particularly as to its mechanism, and to the question whether or not it is the cause or the effect of the increase of animal heat? This new phenomenon

of increased calorification continues for a long time; I have known it to last during several successive months in the dog, without, however, noticing any appearance of inflammation, or of œdema, or of any other pathological alteration in the parts.

I ought not to omit to add that I have found neither the resection of the nerves of motion, nor of those of sensibility of the face, prevents the increase of heat being produced as soon as the great sympathetic is divided.

2. *Influence over the Sensibility.*—When a nerve of sensation is cut, every one knows that it produces a loss of sensibility in the part to which it is distributed; it is again the reverse of this which takes place when the great sympathetic is cut. In this way, when the superior cervical ganglion of a cat or of a rabbit is extirpated, the sensibility of the whole of the corresponding side of the face is augmented. It is particularly in the eye that this phenomenon can be with most ease detected. Nevertheless, this exaggeration of sensibility is difficult of application by the ordinary means. But this fact becomes very evident, when we use certain substances as the *curare*, which destroy very gradually the sensibility. In this way, when an animal is poisoned by a very diluted dose of *curare*, all the parts of the body where the sympathetic had not been cut become insensible long before the side of the face from which the cervical ganglion had been extirpated. This portion of the body appears to survive a longer time than the others. I ought to state that the temperature continues always very much elevated.

I merely wished, in making this communication, to state these two results, which appear to me very important; and, I believe, entirely new. At present, I only wished to mention them, to secure to myself the priority of announcement, as I propose shortly developing and commenting on them in a publication on the functions of the great sympathetic.—*Compte rendu de la Société Biologique de Paris*, in *Gaz. Médicale*, Feb. 1, 1852.

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4. *Physiological Investigations regarding the Salivary Glands in Man and Animals.*—M. Cl. Bernard very recently read a paper on this subject before the Academy of Sciences of Paris; his deductions are very important, and summarily as follows: From the facts brought forward in my paper, it may be inferred, 1. That anatomical observations present to us the group of salivary glands as an homogeneous apparatus, the parts of which bear by their texture a perfect analogy to each other. 2. That physiological analysis and experiments, on the contrary, by pointing out the diversity of the secreted fluids, and by causing the observer to notice the nervous force which regulates the secretions, teach us that each gland presides over one special act, and that its functions are performed by the agency of distinct and independent influences. There is no doubt that, although the different kinds of saliva are poured into the mouth simultaneously, their use remains, nevertheless, distinct; we are thus taught by experience that the principal function of the parotid gland is to secrete a fluid which is to favour mastication, that of the sub-maxillary gland to secrete for gustation, and of the sub-lingual gland and buccal follicles for deglutition.

It is only by the assistance of these physiological data that the modifications which the salivary organs undergo in the different classes of vertebrated animals can be studied and understood according to their true meaning. The characters of salivary glands are *not* to be deduced from their anatomical structure, their volume or form, but from the nature of the function with which they are connected. It would, therefore, be a physiological error, which has been committed by some anatomists, among whom is J. F. Meckel, to look for parotid and submaxillary glands in birds, as those organs cannot exist, since the two corresponding functions, mastication and gustation, are generally wanting in this class of animals. It is thus evident that the use of all the salivary glands which exist in birds should be looked upon as ministering to the only function which in them accompanies the ingestion of food—viz., deglutition. The thick and viscous liquid which is secreted by the glands of birds, has nothing in common with the saliva of the parotid and sub-maxillary glands, and is perfectly analogous to the fluid secreted by the sub-lingual gland and buccal follicles of the mammalia. The parotid is found in its greatest degree of development in

such of the mammalia as habitually chew dry and hard substances, whilst it becomes atrophied in those which live in water and feed upon moist food, though the other salivary glands preserve their normal development in reference to the functions with which they are connected.

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5. *The Blood of the Splenic Vein.*—A most able microscopical and chemical examination of the blood of the splenic vein has been made by Dr. Otto Funke. The original paper is a very long one, and we have selected only some portions of it. Funke, for various reasons, chose the blood of horses for his investigation.

Under the microscope, the splenic venous blood presented remarkable differences from the blood of the general venous system, as represented by the blood of the jugular vein, and from arterial blood. The red corpuscle did not form *rouleaux*, but in great numbers were aggregated in thick, irregular heaps, or in smaller numbers (6 to 12) forming little round or angular flakes, such as Ecker describes in the spleen-pulp. Pressure did not separate these heaps, but merely produced chasms at certain points. After some days, this firm cohesion of the corpuscles diminished. The size of the corpuscles varied extremely, but the majority were very small—smaller, indeed, than the corpuscles found elsewhere. The white corpuscles were excessively numerous; in one case they amounted in number to a quarter or a third part of the coloured particles; they collected also in heaps, and seemed to be united by a fine molecular matter. In some places they were mixed up with the red particles. In size they varied greatly, being sometimes as large as a red particle, at other times double the size. Some clearly contained a single nucleus. Although not absolutely certain of the fact, Funke believes that he traced the transition forms from one set of particles into the other.

Besides these cells there were constantly present "granular cells" (Körnchenzellen), so to call them, although Funke does not desire to imply that they are the same as the various cell-forms often placed under this title. They were larger than the colourless corpuscles, and lay among them aggregated, or in heaps of two or three together. They were undoubtedly cells, and the cell-wall could be plainly seen; they were always spherical, transparent, with a defined border, and contained from four to ten small, dark, outlined, strongly refracting granules, grouped in various ways, either centrally heaped together, or forming a crescent, or without particular order, and frequently changing their mode of arrangement. Generally colourless, these cells were sometimes slightly yellow; they appeared to be identical with cells described by Ecker in the spleen-pulp.

Pigment cells, as described by Ecker and Kölliker, were never seen.

Once only, in many hundred examinations, could Funke find a blood-corpuscles-holding cell, although he examined more than a hundred drops of blood. As he could often find the cells in the spleen, he suggests two possible reasons for their rare appearance in the splenic venous blood; either they had become destroyed during the considerable space of time after death which elapsed before he examined the blood, or they are really absent in the blood issuing from the spleen. Funke does not attach much importance to the first suggestion, as, in the venous splenic blood of a dog examined at once after death, he could find none of these cells. He is inclined to adopt the view that the blood-corpuscles are destroyed in the spleen. The single cell seen by him in the venous blood was tolerably large, oblong, transparent, with an evident granular nucleus, and in its centre were three unchanged blood-corpuscles, similar to those external to the cell.

There were also in the splenic-venous blood of the horse some singular, or, as Funke terms them, "enigmatical bodies," about whose nature he seems very doubtful. These were round or oblong bodies, with defined outlines, slightly granular on the surface, of various sizes, sometimes as large as a starch granule, at other times almost filling the field of view; they lay in the spaces between the heaps of red corpuscles, or were sometimes enclosed round by these or by white corpuscles, like a ring. Whether they are cells or amorphous

heaps, Funke does not know, but inclines to the former opinion. He found them not only in the horse, but in the fresh blood of the dog.

Besides these forms there were fibrinous flakes.

The addition of weak acetic acid produced the following changes. Some red corpuscles were entirely destroyed; others smaller and less deep-coloured were not affected, as Gerlach has also noticed—the white corpuscles were made quite hyaline, but the outer wall was not destroyed for a long time; the nuclei were brought clearly into view, were spheres or ellipses, eccentric, faintly spotted, and usually single, or less commonly double or treble. The granular cells were made hyaline, and dissolved slowly; the granules appeared at first to Funke to be unaffected, but more accurate observations taught him that they also dissolved; and, therefore, in spite of their remarkable resemblance, they were not fat. The peculiar round enigmatical bodies were unaffected by the acid.

The effect of water on the splenic venous blood was most remarkable. If a drop of blood is placed on the object-glass, and allowed somewhat to dry, and then if water is added, the following changes occur—for some time the blood-corpuscles diminish, become indented, then oblong and linear, and at last take the form of little rods, so to call them; these extend in length, and form at length prismatic needle-like crystals, crossing the field in all directions, and interlacing. This process is so rapid that it is difficult to observe that these crystals really form out of the blood-corpuscles. ("Aus den Blutkorperchen selbst Entstehen.") These crystals were red coloured; their exact crystalline form could not be accurately determined; but they appeared, in some cases, certainly to be six-sided prisms, with dihedral apices. Besides these crystals, there was another form, consisting of rhombic tables, like cholesterine, and of various sizes. Many of the blood-corpuscles remained unchanged.

The needle-form and prismatic crystals sometimes appeared, though in imperfect forms, by simple drying of the splenic blood, without the addition of any water. With respect to the chemical nature of these crystals, and to the effect of reagents upon them, Funke has made innumerable experiments, but without being able to come to any positive results.

Dr. Funke proceeds, after some remarks on the increase of white corpuscles of the blood in some enlargements of the spleen ("Leukæmia,"—Virchow; "Leucocythæmia,"—Hughes Bennett), to the consideration of the chemical constitution of splenic blood; but this portion of the paper we must defer.—*Henle's Zeitschrift*, p. 172: 1851.

It may be interesting to give in connection with the above the latest observations of Kolliker on the same subject. The blood of the splenic vein differs according to his observations from ordinary venous blood, in the deeper colour of its serum, in the great number of colourless blood-corpuscles, in the nature of the coloured elements, and in the presence of blood-corpuscles-holding cells, and of their derivatives.

The deeper colour of the serum appears to depend either on a great amount, or on a particular condition, of the pigment. The great number of colourless blood-corpuscles, as noted originally by Kölliker, in the blood of dogs, can be observed in many animals. It appears to Kölliker premature to assert, with Funke, that the white metamorphose into red corpuscles. If it is certain that some lymph globules form red blood-corpuscles, yet all lymph globules do not do so, and it is equally certain that all white corpuscles found in the blood do not run through this transition. On the contrary, the large, many-nucleated pus-like cells, do not change into red blood-corpuscles, but are connected with the solution of these, and it may be the same with these colourless cells of the splenic venous blood. The origin of these white cells is not clear; they may be nothing else but the elements of the spleen-pulp passing into the blood.

Kölliker has not, like Funke, observed any constant peculiarity in the red corpuscles; they vary in size, and are often not decolorized by water, and some of them, as Funke observes, are not affected by acetic acid.

In certain peculiar blood-corpuscles, crystals are occasionally seen. (*Cyclopædia of Anatomy and Physiology*, art. Spleen, p. 792, where two wood-cuts are given of them, as seen in the hepatic and splenic blood of a dog.) The crystals

are rod-shaped, yellowish, unaffected by water, but disappear in acetic acid. In the spleen-pulp of the barbel (*barbus fluviatilis*) Kölliker found a great number of free spindle-shaped or needle-formed crystals. Funke's observations are alluded to, but no examination appears to have been made by Kölliker himself, as to the effect of water on the splenic venous blood of the horse.

Kölliker also observed blood-corpuscles-holding cells (more constantly, apparently, than Funke) and the coloured and colourless granular (Körnchen) cells, which are derived from them.—*Microscopische Anatomie.*—Vol. ii., part 2, p. 279.

ORGANIC CHEMISTRY.

6. *On the Fibrin of Muscle.*—The substance of muscular fibre has been commonly designated as *fibrin*, and has been considered identical with the fibrin of the blood. This, however, is an error, as Professor Liebig has proved by the following experiments.

When the fibrin of blood is treated with water acidulated with a tenth part of hydrochloric acid, it soon swells and becomes changed into a gelatiniform mass, which is soluble in boiling water; if more concentrated acid be added, however, it returns to its primitive volume, again swelling when water is again added. This experiment may be repeated several times, without any notable proportion of the fibrin being dissolved. On the other hand, the substance of muscle very speedily dissolves in water containing hydrochloric acid in the above-named proportion, and this at the ordinary temperature; the solution is somewhat viscid, and is rendered slightly opaque by the presence of fat. When neutralized, it coagulates; and the coagulum dissolves in an excess of alkali, or in lime water—but not in the latter if it have been first boiled.

The proportion of this fibrin readily soluble in dilute acid, is very different in the several kinds of animal flesh; thus the muscular substance of the common fowl and of the ox dissolves almost entirely; that of the sheep leaves a considerable undissolved residue; whilst that of the calf does not yield more than half its weight to the dilute acid. This insoluble residue is white and elastic, but more gelatiniform and less white than the blood-fibrin swollen up by dilute acid.

The so-called fibrin of muscle is stated by Strecker to have rather the composition of albumen than that of blood fibrin, containing less azote than the latter; but we must own that we distrust all minute differences in these organic analyses. The differences between two of Strecker's analysis of this very substance, for example, are as great as between one of them and the composition ordinarily given for albumen, which is itself but an average derived from a number of analyses differing considerably from each other.

When blood-fibrin is kept in water in a closed vessel, and at a moderate temperature, decomposition soon commences in it; at the end of three weeks it is completely dissolved, and the liquor, which includes some flocculi of sulphuret of iron, possesses all the characters of an albuminous solution, and forms a coagulum by heat, which has the precise composition of albumen.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1852, from *Annalen der Chemie und Pharmacie*, bd. lxxiii.

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7. *Paralbumen and Metalbumen.*—Under the above title, Scherer has lately described two modifications of albumen, which he detected in the fluid of an ovarian dropsy. The paralbumen precipitates with nitric and hydrochloric acid as usual, but the chief character in which it differs from ordinary albumen, is the solubility in water of the precipitate thrown down by alcohol. In this it resembles the albumen of the pancreatic fluid as noted by Bernard; the paralbumen also forms a turbid solution, not cleared by filtering, when heated with acetic acid, whereas ordinary albumen precipitates completely, and is left on

the filter. It differs from casein, in not being thrown down by acetic acid in the cold; the elementary constitution of this body has not been made out.

The metalbumen was found in a viscous, almost gelatinous, liquid, from an ovarian cyst. Digested in water, part dissolved, part was sedimentous: In the solution, nitric acid produced a whitish-yellow precipitate, insoluble in excess of acid, and after a time the fluid became gelatinous. Acetic acid did not cause any precipitate, and herein it differed from paralbumen. Alcohol precipitated it; the precipitate, as in the case of paralbumen, dissolved in water, and in this solution nitric acid produced no precipitate, but made the fluid gelatinous. Sherer inquires whether this metalbumen may not be a transition form from albumen to mucus or colloid substance.—*Med. Times and Gazette*, Feb. 21, 1852, from *Verhandlungen der Phys. Med. Gesellschaft in Würzburg*.—Vol. ii., pp. 214 and 278.

MATERIA MEDICA AND PHARMACY.

8. *On the Benefits that may be derived from placing Medicinal Substances upon the Tongue instead of into the Stomach.*—A curious and interesting communication on this subject was read before the Medical Society of London (Jan. 10, 1852) by Mr. Wardrop.

"In a practical science," the author observed, "like that of medicine, an insulated fact often forms a connecting link with other facts that had appeared equally unimportant. The medical observer does well to collect such facts, and it is not one of the least advantages of societies, that they stimulate members of the profession to record observations which might not have been deemed of sufficient importance to be brought before the public in any other channel. With such an impression, I venture, on the present occasion, to call the attention of my fellow-members to a subject which seems to be worthy of their consideration, and which has not hitherto, as far as I know, claimed much attention. There are many circumstances which might be mentioned, in order to show the influence which some medicinal substances have on the animal economy when they are placed upon the surface of the tongue, these effects being caused by the absorption of the medicine, and its subsequent admixture with the mass of blood. Such phenomena are quite analogous to the effects produced by mercury or arsenic, whether these pass into the blood by the pulmonary, by the cutaneous, or by the absorbents of the alimentary canal. A gentleman, subject to what are usually called bilious headaches, had, during many years, seldom failed to obtain relief by taking sometimes two, and sometimes only one grain of calomel. He repeatedly found that there was a distinct difference in the length of time which the calomel took to relieve the headache, according as it was taken in the form of a powder put upon the tongue, or of a pill taken into the stomach. Another gentleman who had for many years suffered from dyspepsia, and who, for some years before I saw him, was in the habit of regulating his bowels by taking a pill composed of a couple of grains of aloes with myrrh, accidentally discovered that there was a remarkable difference in the effect of the pill when swallowed or when allowed to dissolve in the mouth. When taken into the stomach, it always created a good deal of pain in the whole course of the alimentary canal, and the evacuations were irregular both in number and in quantity; but when the pill was dissolved in the mouth, no other sensible effect was ever produced than one natural evacuation. Further experience convinced me of the difference in the efficacy of medicines placed upon the tongue, or taken into the stomach, and led me to inquire into the cause, and endeavour to explain so important a phenomenon. The structure of the tongue pointed out that it possesses an abundant supply of absorbents. 'The spirituous parts,' observes the illustrious Haller, 'more especially of vegetables, are received either into the papillæ themselves, or into the absorbing villi of the tongue; as appears from the speedy renovation of strength by liquors of this kind even when they are not taken into the stomach.' This structure

satisfactorily explains how medicinal bodies, when placed upon the tongue, are absorbed and carried directly by the absorbent vessels of that organ into the venous circulation; whereas, when the same substances are taken into the stomach they are necessarily mixed with the food and juices contained in the alimentary canal, so that a more lengthened period must be required to separate them, and convey them by the absorbents into the thoracic duct, and thence into the venous system. Or they may pass unchanged, as has often been observed, out of the stomach, and in this unaltered state they are evacuated along with the excretions from the alimentary canal. This remarkable effect of medicines when placed upon the tongue, is strikingly illustrated in the administration of calomel; and it will be found that placing a very small quantity of it, say the sixth or even the twelfth part of a grain at short intervals, upon the tongue, such as every half-hour, the mineral is rapidly absorbed, and ptyalism more quickly produced than by any other mode of employing the calomel. These results of medicines, I may also observe, are well known by the effects which croton-oil produces when applied to the tongue; and it is by no means improbable that the good effects of some medicines, when used in the form of lozenges, may be attributed to their absorption by the vessels of the tongue. All the circumstances regarding the difference and the effects of medicinal bodies, when conveyed to the venous system directly by the vessels of the tongue, or when they reach the blood by the more uncertain and circuitous course by the absorbents of the alimentary canal, appear to be worthy of being noticed, and may, it is not too much to hope, lead to some practical improvement in the mode of administering remedies. How far such differences will be found to result from exhibiting chloroform, the hydrocyanic acid, and the sulphates of quinine, iron, copper, and zinc, in the form of lozenges, and the advantages of using these medicines in such a manner, well merits further inquiry."

[Are we not furnished in the above statement with an explanation of the fact, that rhubarb, when chewed, acts upon the bowels in a much smaller dose, than when administered in the form of pill?—*Editor.*]

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9. *The Efficacy of the Tannate of Quinine.*—In our number for April 1850, we published a note to us from Dr. Richd. H. Thomas, of Baltimore, on the advantages of tannate of quinine, in its not possessing the bitterness of the other preparations of quinine. That note has attracted attention to the salt, and we find that a report was read before the Academy of Medicine, of Paris, on the 17th of February, 1852, by M. Bouvier, in the name of a committee, composed of MM. Orfila, Bussy, and himself, touching a paper of M. Barreswil on the therapeutic properties of tannate of quinine. The committee having instituted investigations on the subject, have come to the conclusion: 1. That the tannate of quinine is an anti-periodic agent. 2. That it possesses, the weight being the same, an activity equal but not superior to that of the officinal disulphate of quinine, for the cure of ague. 3. That it does not shield from relapse any more than the sulphate of quinine. 4. That it presents hardly any bitterness, which circumstance renders its administration easy, even with very delicate persons and children. 5. That by clinical experiments it has been proved that the tannate of quinine acts less on the organs of digestion, and especially on the nervous system, than the disulphate of quinine. 6. That whilst it bears analogy with the Peruvian bark by its constituent principles, and with the disulphate of quinine by the fixity of its composition, it is also very like these two substances by its therapeutical action. The reporter stated finally, that the tannate of quinine acts in ague as the Peruvian bark or the disulphate of its alkaloid, and that it may in certain cases take the place of the latter substance, though it has the disadvantage, as an amorphous salt, of being very liable to adulteration. He also added that it should be borne in mind that the tannate has not been tried in pernicious intermittents. Thanks were voted to the author, and he was requested by the Academy to continue his investigations, and report their results to the Society.

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10. *Tartrate of Soda as a Purgative.*—M. Delioux recommends the crystallized tartrate of soda as a most agreeable and certain purgative, being quite equal in

power to the sulphate of soda or magnesia, and not repugnant to the taste. The medium dose, for active purgation, is ten drachms, little or no colic attending its action. The sulphate, phosphate, and tartrate of soda, and the tartrate of soda and potassa, may indeed be substituted for each other, as regards their purgative action; but the tartrate of soda surpasses them all in pleasantness of taste. M. Delioux is no believer in the doctrine which connects the purgative action of a body with its sapidity, the purgation resulting from the indigestibility of the body swallowed, and the exosmosis it gives rise to.—*Brit. and For. Med.-Chir. Rev.*, from *Bull. de Thérap.*, vol. xli.

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11. *Solution of Iodine facilitated by Tannin.*—After numerous attempts to procure the solution of small quantities of iodine in water, without the intervention of iodide of potassium, M. Debauque discovered that the addition of an ounce of the syrup of orange-peel to a six-ounce mixture, enabled this to completely dissolve from twenty-five to thirty centigrammes of iodine. Seeking for the principle contained in the syrup which produced this effect, he concluded it could only be the tannic acid contained in the bark of the curacao; and direct experiments with small quantities of tannic acid proved this to be the case.—*Brit. and For. Med.-Chir. Rev.*, from *Bull. de Thérap.* vol. xli.

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12. *On Iodined Oil.*—M. Guibourt recently read a report of a committee, consisting of himself and MM. Soubeiran, Gibert, and Ricord, appointed by the Academy, to consider how far a definite combination of iodine with oil might be employed with advantage therapeutically. M. Marchal first proposed the employment of this substance in 1848, under the idea that iodine was the active element in cod-liver oil, and that a preparation containing a large proportion of this substance would prove of advantage. Since then, MM. Personne and Deschamps have each proposed formulæ for its preparation. M. Personne believes that, small as is the proportion of iodine in cod-liver oil, it is a very important ingredient; and without expecting in all cases to replace cod-liver oil, he believes that a larger proportion of iodine, combined with an assimilable substance, may prove a highly valuable medicinal agent—the oily vehicle enabling it to penetrate into the economy, and abandoning it there gradually as it itself is burnt off during respiration. According to his plan of procedure, five parts of iodine are dissolved in 1000 of sweet almond oil, and a jet of aqueous vapour is passed through the mixture until quite decolorized. Five other parts of iodine are now added, and the decoloration similarly performed. No traces of vapour of iodine are perceived; but the vapour of the water which is condensed exhibits strong traces of the presence of hydriodic acid. The oil is washed with a weak alkaline solution, as long as any acid reaction appears, and is then filtered. By adding successive quantities of iodine, double the quantity may be combined, but it is then difficult to avoid obtaining a high-coloured liquor.

In this way an oil may be produced, differing little in taste or appearance from almond oil, so that it can be easily administered alone or in emulsion. When forty grammes of it are swallowed, an hour and a half elapses before it shows its presence in the saliva. It becomes more and more manifest during twelve hours, and then diminishes, being still very sensible after eighteen or even twenty-four hours, but quite disappearing after thirty. M. Deschamps produces an iodined oil by the agency of alcohol; but the reporter regards it as nowise superior to that prepared more easily by M. Personne's method.

M. Gibert has experimented with both these oils. In several cases of chronic impetigo, in which it has been employed internally and externally, a rapid resolution of the eruption has resulted, more rapid than under the agency of cod-liver oil, which is so much more difficult of administration. It has failed in several chronic scrofulous *engorgements*, which had also resisted cod-liver oil. M. Gibert's experiments with the oil have not yet been sufficiently numerous to enable him to estimate its exact value; but he is even now enabled to state that it possesses considerable resolvent power in certain of the chronic eruptions and glandular enlargements. M. Ricord has employed it during a year in a great variety of scrofulous affections, most of which have been mistaken for

syphilitic disease. He has derived excellent effects from it in strumous bubo, tubercular epididymitis, and in some cases of scrofulous engorgements of the joints. In these cases, satisfactory effects have much more promptly followed the use of the iodined than of the cod-liver oil. M. Puche, M. Ricord's colleague, has come to a similar conclusion. The dose given has been usually 60 grammes per diem; but this has frequently been increased to 100. It is usually well borne, only exciting purgation exceptionally, when large doses are given. —*Brit. and For. Med.-Chir. Rev.*, Jan. 1852, from *Bull. de l'Acad.*, vol xvi.

13. *On the Suspension of Gum-Resins.*—M. Poulenc describes a mode he has successfully adopted of suspending gum-resins, as assafetida, ammoniacum, myrrh, &c., in mixtures or enemata. If the division of the body be accomplished by means of yolk of egg, it is a very tedious process; but if to every gramme of the gum-resin we add six or eight drops of sweet almond oil, it easily becomes broken up. When the oil has become well incorporated with the mass, and a homogeneous paste is produced, the vehicle is to be added, at first gradually, and then entirely. A complete emulsion is thus produced in a very short time. Another advantage of this mode of preparation is, that it allows the mixture to be warmed, if required, before employing it, without causing any coagulation. M. Poulenc employs the same means of subdividing the gum-resins which enter into the composition of emplastra.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1852, from *Bulletin de Thérapeutique*, vol. xli.

14. *Mode of Administering Balsam of Copaiva.*—By M. Chervet. Thirty parts of the balsam are stirred round in a glass mortar with four of sulphuric acid. The mass quickly solidifies, and may be made into pills, which may be afterwards covered with a coating of gum and sugar. If the copaiva be adulterated with castor oil, the solidification does not take place; while, if adulterated with turpentine, although solidification does take place, the mass, when placed in water, becomes covered with a white, bitter, resinous substance. The medicinal virtues of the copaiva are by no means impaired by the above proceeding, while its disagreeable flavour is destroyed.—*Brit. and For. Med.-Chir. Rev.*, from *Journ. de Chimie Méd.*, 1851.

15. *On Extractum Carnis.*—Dr. Benke gives the following receipt for making beef tea: "One pound of lean beef, free of fat, and separated from the bones, in the finely chopped state in which it is used for beef sausages, or mincemeat, is uniformly mixed with its own weight of cold water, slowly heated to boiling, and the liquid, after boiling briskly for a minute or two, is strained through a towel, from the coagulated albumen and fibrine, now become hard and horny. Thus we obtain an equal weight of the most aromatic soup, of such strength as cannot be obtained even by boiling for hours from a piece of flesh. When mixed with salt, and the other usual additions by which soup is usually seasoned, and tinged somewhat darker, by means of roasted onions or burnt sugar, it forms the very best soup which can in any way be prepared from one pound of flesh." He states that he has often used this beef-tea, and from what he has experienced he cannot recommend it too strongly. In many diseased states it is not to be replaced by any other sort of food or remedy. He has administered it in scrofula and phthisis, especially in those cases in which derangements of the digestive organs were present, such as ulcerations, dyspepsia, tubercular deposits in the intestinal glands, &c. He has given it in the early and later periods of typhus, and to patients suffering from inflammation of the cellular tissue, and rapidly wasting away in consequence of the most abundant suppurations; and there cannot exist a more rational remedy than beef-tea, to compensate the abundant loss of materials. He has finally given it in many other states which required a good nourishment by animal diet, and almost all patients who are convalescent from severe diseases are most beneficially influenced by it. He does not enter into a more accurate explanation of the effects of the beef-tea; it is self-evident that a substance, containing all constituent parts of the meat, both inorganic and organic, and not at all causing any exer-

tion of the digestive organs to recompose into nutritive material, must be of such an effect as no other special remedy can be expected to manifest.

This being a fact, it appears to be most desirable, that the beef-tea, which the author calls *Liebig's beef-tea*, should be well known to every practitioner, and should be always given wherever the state of the patient requires a good animal, nitrogenous food. However, as he has often experienced, one meets in practice with many difficulties in having it prepared, or provided at all for the patients, especially in dispensary practice, where poverty appears with all its sad consequences and companions, and where so many cases occur requiring a nourishing, strengthening treatment; in advising patients to take meat, beef-tea, &c., we hear them too often answering, "we cannot afford it." In private practice, we find single persons confined to their bedrooms, with scarcely any assistance at all; perhaps we order them to take the before-mentioned beef-tea, but it is beyond all possibility for them to have it prepared, as it requires some attention and carefulness. And even in family practice, it is necessary to describe each time the mode of preparing the beef-tea on the one hand, and questionable on the other, whether the attendants of the patient prepare it with that accuracy which is required for the accomplishment of our purposes. Hence, it appears as desirable as possible, to have an opportunity for easily providing patients of all classes with a sort of food and a remedy, which cannot be replaced by any other: and he therefore advises that the beef-tea be prepared at the chemists' and druggists' shops. It must be mentioned, that the above-described beef-tea, when evaporated in a water-bath, and cooled afterwards, forms a brownish-yellow extract, and this extract, to which we may give the name of *extractum carnis*, should be prepared and kept for sale by chemists. In accurately following the above-described method of preparing the beef-tea, the quantity obtained out of six pounds of meat may be evaporated to three ounces, and those three ounces, after having cooled, form the *extractum carnis*. One ounce of *extractum carnis* is therefore equal to thirty-two ounces of meat, whence it can easily be calculated how much of it is required for providing a patient daily with the constituent parts of three, four, five, six, or more ounces of meat.

The following 3 articles contain interesting remarks. 16-17-18—

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

16. *On the Curability of Phthisis Pulmonalis.*—By Prof. J. H. Bennett, (Extracted from a Clinical Lecture in *Monthly Journ. Med. Sci.*, Jan. 1852.) Up to a very recent period, the general opinion has been, that phthisis pulmonalis almost always marches on to a fatal termination; and that the cases of its arrestment which were known to have occurred, were so few as merely to constitute an exception which proved the rule. Morbid anatomy has now, I think, demonstrated that tubercles, in an early stage, degenerate and become abortive with extreme frequency. In 1845, I made a series of observations with reference to the cretaceous masses and puckering so frequently observed at the apices of the lungs in persons advanced in life. The conclusion arrived at was, that the spontaneous arrestment of tubercle in its early stage occurred in the proportion of from one-third to one-half of all the individuals who die after the age of forty. The observations of Rogée and Boudet, made at the Salpêtrière Hospital in Paris, amongst individuals generally above the age of seventy, showed the proportion in such persons to be respectively one-half and four-fifths.

That the cretaceous and calcareous concretions, accompanied with puckerings (examples of which I now show you), are really evidences of abortive tubercles, is established by the following facts:—

1. A form of indurated and circumscribed tubercle is frequently met with, gritty to the feel, which, on being dried, closely resembles cretaceous concretions.

2. These concretions are found exactly in the same situations as tubercle. Thus they are most common in the apex, and in both lungs. They frequently occur in the bronchial, mesenteric, and other lymphatic glands, and in the psoas muscle, or other textures which have been the seat of tubercular depositions, or scrofulous abscesses.

3. When a lung is the seat of tubercular infiltration throughout, whilst recent tubercle occupies the inferior portion, and older tubercle, and perhaps caverns, the superior, the cretaceous and calcareous concretions will be found at the apex.

4. A comparison of the opposite lungs will frequently show, that whilst on one side there is firm encysted tubercle, partly transformed into cretaceous matter, on the other the transformation is perfect, and has occasionally even passed into a calcareous substance of stony hardness.

5. The seat of cicatrices admits of the same exceptions as the seat of tubercles. In one case, I have found the puckering and cicatrix in the inferior lobe only; and have met with three cases, where the inferior lobe was throughout densely infiltrated with tubercle, whilst the superior was only slightly affected.

It has indeed been argued, that occasionally these cretaceous masses may be the result of a simple exudation, or of what Dr. Gairdner has called bronchial abscess in the lung. When they are found isolated in the middle or base of the organ, such certainly may be the case, and consequently the fifth argument may be affected. But this is rare, and can scarcely make any alteration in the vast proportion of those concretions and puckerings which are undoubtedly the result of abortive tubercles. With these facts before us, and with the knowledge that there is nothing in the nature of tubercle itself which is opposed to the evidence of these anatomical facts, the frequent spontaneous cure of tubercle may now be considered established.

Since these observations, however, have become known, it has been stated that after all, practically speaking, phthisis pulmonalis does not mean the existence of a few isolated tubercles scattered through the lung, and that what is really meant is that advanced stage in which the lung is affected with ulceration, and in which the bodily powers are so lowered that perfect recovery seldom or never takes place. But here again a careful examination of the records of medicine will show that many even of these advanced cases have recovered. Laennec, Andral, Cruveilhier, Kingston, Pressat, Rogée, Boudet, and others, have published cases where all the functional symptoms and physical signs of the disease, even in its most advanced stage, were present, and yet where the individual survived many years, ultimately died of some other disorder, and on dissection cicatrices and concretions have been found in the lungs.

I here show you a preparation, exhibiting a remarkable cicatrix in the lung, which I described and figured in the *Monthly Journal*, for March, 1850. As it is short, I may quote it:—

"John Keith, æt. 50, a teacher of languages, was admitted into the Royal Infirmary, February 8, 1844, in a state of coma, and died an hour afterwards. On examination, the membranes of the brain, at the base, were unusually congested, and covered with a considerable exudation of recently coagulated lymph, here and there mingled with bloody extravasation. The apex of the right lung presented a remarkable cicatrix, consisting of dense, white, fibrous tissue, varying in breadth from one-fourth to three-fourths of an inch, and measuring about three inches in length. The pleural surface in its neighbourhood was considerably puckered. On making a section through the lung, parallel with the external cicatrix, the substance immediately below presented linear indurations, of a black colour, together with five cretaceous concretions, varying in size from a pin's head to that of a large pea. The surrounding pulmonary substance was healthy. The apex of the left lung was also strongly puckered, and contained six or seven cretaceous concretions, each surrounded by a black, dense, fibrous cyst.

"A very respectable-looking and intelligent man, who attended the *post-mortem* examination, informed me that Keith, in early life, was in very indifferent circumstances, and had supported himself as a writer. At the age of two-and-twenty, or three-and-twenty, he laboured under all the symptoms of a deep de-

cline, and his life was despaired of. About this time, however, he was lost sight of by his friends; but it was afterwards ascertained that he had become a parish schoolmaster, in the west of Scotland, and that his health had been re-established. He returned to Edinburgh six years before his death, and endeavoured to gain a livelihood by teaching Latin and French. He succeeded but very imperfectly, and fell into dissipated habits. Latterly, he had become subject to attacks of mania, apparently the result of drink. It was after an unusually severe attack of this kind that he was brought into the Infirmary, where he died in the manner previously described."

The case points out the following important facts: 1st. That, at the age of twenty-two or twenty-three, the patient had a tubercular ulcer in the right lung, the size of which must have been very considerable when the contracted cicatrix alone was three inches long. 2d. That tubercular exudations existed in the apex of the left lung. It is, therefore, very probable that the statement made by his friend at the examination was correct—namely, that he laboured under all the symptoms of advanced phthisis pulmonalis. It is shown, 3dly, That after receiving the appointment of a parish schoolmaster, after changing his residence and occupation, while his social condition was greatly improved, these symptoms disappeared. We may consequently infer, that it was about this period that the excavation on the right side healed and cicatrized, while the tubercular exudations on the left side were converted into cretaceous masses, and so rendered abortive. It demonstrates, 4thly, that when, at a more advanced age, he again fell into bad circumstances, and even became a drunkard, tubercular exudations did not return, but that delirium tremens was induced, with simple exudation on the membranes of the brain, of which he died.

Further, I have conversed with most of the distinguished physicians in this country and on the Continent, and find that they are all enabled to refer to cases, which they are now satisfied have undergone a permanent recovery, even when cavities have existed in the lungs, and all the advanced symptoms of the disease have been present. I once made an effort to accumulate the experience of these distinguished men, on this point alone, and had I done so, it would have constituted an unanswerable amount of evidence as to the curability even of the worst cases of phthisis. Want of time, however, prevented them from writing down the facts. But it is unnecessary to refer you to recorded cases, when the fact stands before you in the case of Barclay. Its comparative frequency, indeed, might be illustrated by such an inquiry, and I believe this to be much greater than is generally supposed; but to the great fact itself, nothing more can be added in the way of evidence than that which is before you; namely this remarkable cicatrix found in the lung of Keith, and a careful examination of the lad Barclay now in the ward. So deeply rooted, however, has been the opinion of the necessarily fatal nature of this disease, that the generality of practitioners have concluded, that *because* phthisical cases recovered, the disease was *not* phthisis; that is, they have rather distrusted their own diagnosis than ventured to oppose a dogma of general belief.

But although the fact of the curability of phthisis pulmonalis, even in its most advanced stage, can no longer be denied, it has been argued that this is entirely owing to the operations of nature, and that the physician can lay little claim to the result. Andral, who early admitted the occasional cicatrization of caverns, states this in the following words: "No fact," he says, "demonstrates that phthisis has been ever cured; for it is not art which operates in the cicatrization of caverns; it can only favour this, at most, by not opposing the operations of nature. For ages, remedies have been sought either to combat the disposition to tubercles, or to destroy them when formed, and thus innumerable specifics have been employed and abandoned in turn, and chosen from every class of medicaments."* But if it be true, according to Hoffmann, that "*Medicus naturæ minister non magister est,*" it follows that, by carefully observing the operations of nature, learning her method of cure, imitating it as closely as possible, avoiding what she points out to be injurious, and furnishing what

* Dict. de Méd. 1st Edit. Phthisie.

she evidently requires, that we may at length arrive at rational indications of cure. Both the cases of Keith and Barclay, in my opinion, furnish evidence that we have in a great measure attained this end.

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17. *The Pathology and General Treatment of Phthisis Pulmonalis.* By Prof. J. H. Bennett.—Many observing physicians have not failed to notice, that phthisis pulmonalis is ushered in with a bad and capricious appetite, a furred or morbidly clean tongue, unusual acidity of the stomach and alimentary canal, anorexia, constipation alternating with diarrhœa, and a variety of symptoms denominated dyspeptic, or referable to a deranged state of the primæ viæ. Moreover, it can scarcely be denied that, in the great majority of cases, these are the symptoms which accompany phthisis throughout its progress, becoming more and more violent towards its termination. Now, as the nutritive properties of the blood are entirely dependent on a proper assimilation of food, and as this assimilation must be interfered with in the morbid conditions of the alimentary canal, the continuance of such conditions necessarily induces an impoverished state of that fluid, and imperfect growth of the tissues. Moreover, when, under such circumstances, exudations occur, it has been shown by the histologist that they do not exhibit any tendency to perfect cell-formations, but that corpuscles are produced, which form slowly, and slowly break down, causing softening, and the production of ulceration, which becomes more and more extensive as the amount of the exudation increases.

An observation of the circumstances which precede the disease, or its so-called causes, clearly indicate imperfect digestion and assimilation as its true origin. Thus phthisis is essentially a disorder of childhood and youth—that is, a period of life when nutrition is directed to building up the tissues of the body. Diminish the proper quantity of food taken by a healthy man, tubercular diseases are not induced; but if this be attempted with children or young persons, they are a most common result. It has been supposed that hereditary predisposition, a vitiated atmosphere, changeable temperature, certain occupations, humidity, particular localities, absence of light, and so on, predispose to phthisis. Very frequently several of these are found united, so that it is difficult to ascertain the influence of each. When they so operate, however, they invariably produce, in the first place, more or less disorder of the nutritive functions, and are associated with dyspepsia, or other signs of mal-assimilation of food.

From a study of the symptoms, causes, morbid anatomy, and histology of phthisis pulmonalis, we are therefore led to the conclusion that it is a disease of the primary digestion, causing: 1st, impoverishment of the blood; 2d, local exudations into the lung, which present the characters of tubercular exudation; and, 3d, owing to the successive formation and softening of these, and the ulcerations which follow in the pulmonary or other tissues, the destructive results which distinguish it. Further observation shows, that circumstances which remove the mal-assimilation of food frequently check further tubercular exudations, while those which previously existed become abortive, and that occasionally more extensive excavations in the pulmonary tissue may, owing to like circumstances, heal up and cicatrize.

A healthy nutrition of the body cannot proceed without a proper admixture of albuminous and oleaginous elements. This may be inferred from the physiological experiments of Tiedemann and Gmelin, Leuret and Lassaigne, Magendie, and others; from an observation of the constituents of milk, the natural food of young mammiferous animals; from a knowledge of the contents of the egg, which constitute the source from which the tissues of oviparous animals are formed before the shell is broken; and from all that we know of principles contained in the food of adult animals. The researches of chemists, such as those of Prout, Liebig, and others, point to the same generalization, when they assert that carbonized and nitrogenized, or, as they are now called, respiratory and sanguigenous food, are necessary to carry on nutrition, inasmuch as oil is a type of the one, and albumen of the other. The chemical theory is imperfect, however, because it does not point out *how* these elements form the tissues; for

it is not every form of carbonized or of albuminous food that is nutritious, but only such kinds of them as are convertible into oil and albumen.

The reason of this was first pointed out by Dr. Ascherson of Berlin, in 1840, and made known by me to the profession in this country in 1841. I have since endeavoured to show that the elementary molecules formed of a particle of oil, surrounded by a layer of albumen, which are produced, as he described, by rubbing oil and albumen together, are not developed directly into blood-globules and other tissues, as he supposed, but must first pass through a series of transformation—a knowledge of which is highly important, not only to a comprehension of nutrition generally, but especially to that anormal condition of it which occurs in phthisis. Thus the successive changes which occur for the purposes of assimilation in the healthy economy may be shortly enumerated as follows: 1st. Introduction into the stomach and alimentary canal of organic matter. 2d. Its transformation by the process of digestion into albuminous and oily compounds: this process is chemical. 3d. The imbibition of these through the mucous membrane in a fluid state, and their union in the termini of the villi and lacteals to form elementary granules and nuclei: this process is physical. 4th. The transformation of these, first, into chyle corpuscles, and, secondly, into those of blood; which is a vital process. It is from this fluid, still further elaborated in numerous ways, that the nutritive materials of the tissues are derived, so that it must be evident, if the first steps of the process are improperly performed, the subsequent ones must also be interfered with. Hence we can readily comprehend how an improper quantity or quality of food, by diminishing the number of the elementary nutritive molecules, must impede nutrition.

The peculiarity of phthisis, however, is, that an excess of acidity exists in the alimentary canal, whereby the albuminous constituents of the food are rendered easily soluble, whilst the alkaline secretions of the saliva and of the pancreatic juice, are more than neutralized, and rendered incapable either of transforming the carbonaceous constituents of vegetable food into oil, or of so preparing fatty matters introduced into the system, as will render them easily assimilable. In consequence, more albuminous than fatty matters enter the blood, and the necessary waste of structure is supplied by the absorption of the adipose tissues of the body. Hence the emaciation which characterizes the disease. In the mean while, the lungs become especially liable to local congestions, leading to exudation of an albuminous kind; which is tubercle. This, in its turn, being deficient in the necessary proportion of fatty matter, elementary molecules are not formed so as to constitute nuclei capable of further development into cells—they therefore remain abortive, and constitute tubercle corpuscles. Thus the local disease is added to the constitutional disorder, and that compound affection is induced, which we call phthisis pulmonalis—consisting of symptoms attributable partly to the alimentary canal, and partly to the pulmonary organs.

To improve the faulty nutrition which originates and keeps up the disease, it is of all things important, therefore, to cause a larger quantity of fatty matter to be assimilated. A mere increase in the amount, or even quality, of the food, will often accomplish this, as in the case of Keith. The treatment practised, some years ago, by Dr. Stewart, of Erskine, which consisted in freely administering beef-steaks and porter, and causing exercise to be taken in the open air, excited considerable attention from its success. I have been informed, that in some parts of America the cure consists in living on the bone marrow of the buffalo, and that the consumptive patient gets so strong in this way, that he is at length able to hunt down the animal on the prairies. All kinds of food rich in fat, will not unfrequently produce the same effects, and hence the value long attributed to milk, especially ass's milk—the produce of the dairy, as cream and butter, fat bacon, caviare, &c.

But, in order that such substances should be digested and assimilated, the powers of the stomach and alimentary canal must not have undergone any great diminution. In most cases it will be found that the patient is unable to tolerate such kind of food, and that it either lies undigested in the stomach, or is sooner or later vomited. Under these circumstances, the animal oils them-

selves are directly indicated, by giving which, we save the digestive apparatus, as it were, the trouble of manufacturing or separating them from the food. By giving considerable quantities of oil directly, a large proportion of it is at once assimilated, and is rendered capable of entering into combination with the albumen, and thereby forming those elementary molecules so necessary for the formation of a healthy chyle. Such, it appears to me, is the rationale of the good effects of cod-liver oil.

Since I introduced this substance to the notice of the profession as a remedy for phthisis, in 1841, I have continually prescribed it in hospital, dispensary, and private practice. I need not, perhaps, say, that I have given it in a very large number of cases, and have observed its effects in all the stages of the disease, and under almost every circumstance of age, sex, and condition. I have had the most extensive opportunities of examining the bodies of those who have died after taking it in considerable quantities, and am still observing the cases of many persons who may be said to have owed their lives to its employment. Further, I have carefully watched the progress it has made in the good opinion of the professional public, and perused all that has been published regarding it in the literature of this and other countries. It were certainly easy for me, therefore, to write at great length on this subject; but I do not see that anything of utility could be added to what I have already published. The following is a summary of my views regarding cod-liver oil, as a remedy for phthisis:—

1. Cod-liver oil is, as M. Taufflied pointed out, an *analeptic* (αναλαμβανω, to repair), and is indicated in all cases of anormal nutrition dependent on want of assimilation of fatty matter.

2. It is readily digestible under circumstances where no other kind of animal food can be taken in sufficient quantity to furnish the tissues with a proper amount of fatty material.

3. It operates by combining with the excess of albuminous constituents of the chyme, and forming in the villi and terminal lacteals those elementary molecules of which the chyle is originally composed.

4. Its effects in phthisis are to nourish the body, which increases in bulk and in vigour; to check fresh exudations of tubercular matter, and to diminish the cough, expectoration, and perspiration.

5. The common dose for an adult is a tablespoonful three times a-day, which may often be increased to four, or even six, with advantage. When the stomach is irritable, however, the dose to commence with should be a tea or dessertspoonful.

6. The kind of oil is of little importance therapeutically. The pure kinds are most agreeable to the palate; but the brown coarser kinds have long been used with advantage, and may still be employed with confidence whenever cheapness is an object.

7. I have never observed its employment to induce pneumonia, or fatty disease of the liver or kidney, however long-continued, although such complications of phthisis are also exceedingly frequent.

Whilst I consider such to be the general pathology and treatment required for phthisis, which should never be lost sight of, you will be greatly mistaken if you suppose that the indications stated can always be carried out. In practice the great difficulties to be overcome, are the numerous complications of phthisis, but, above all, that excessive derangement of the alimentary canal, which is alike the cause of the disease and the obstacle to cure.—*Monthly Journ. Med. Sci.*, Jan. 1852.

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18. *Special Treatment of Phthisis Pulmonalis.* By Prof. S. H. Bennett.—Under the head of General Treatment of Phthisis Pulmonalis, I have pointed out the means of meeting the three indications which should never be lost sight of in this disease. But every case requires a special treatment in addition, which will depend on the unusual severity of this or that symptom, or the existence of peculiar complications. It is to the undue importance given to this special, as distinguished from the general treatment, that I attribute much of that want of success experienced by practitioners. Thus it is by no means

uncommon to meet with patients who are taking at the same time a mixture containing squills and ipecacuanha to relieve the cough; an anodyne draught to cause sleep and diminish irritability; a mixture containing catechu, gallic acid, tannin, or other astringents, to check diarrhœa; acetate of lead and opium pills to diminish hæmoptysis; sulphuric acid drops to relieve the sweating; and cod-liver oil in addition. I have seen many persons taking all these medicines and several others at one time, with a mass of bottles and boxes at the bedside sufficient to furnish an apothecary's shop, without its ever suggesting itself apparently to the practitioner, that the stomach, drenched with so many nauseating things, is thereby prevented from performing its healthy functions. In many cases there can be little doubt that the treatment of symptoms, with a view to their palliation, whilst it destroys all hope of cure, ultimately fails even to relieve the particular functional derangement to which it is directed. Still, these symptoms require attention; but their causes, and the means required for their relief, will be best understood by speaking of each in succession.

Loss of Appetite and Anorexia.—These are the most constant and important symptoms of phthisis, inasmuch as they interfere more than any other with the nutritive processes. If food, or its substitute, cod-liver oil, cannot be taken and digested, it is vain to hope for amelioration in any of the essential symptoms of the disease. Here I must guard you from making a mistake, into which the inexperienced are very liable to fall. Nothing is more common than for phthisical patients to tell their medical attendants that their appetite is good and that they eat plentifully, when more careful inquiry proves that the consumption of food is altogether inadequate, and that they loathe all kinds of animal diet. You should never be satisfied with general statements, but determine the kind and amount of food taken, when you will be at no loss to discover, in the vast majority of cases, sufficient proof of the derangement of the appetite and digestive powers formerly alluded to. Very commonly, also, you will discover acid and other unpleasant tastes in the mouth. In all such cases, especially if too much medicine has been already given, you should allow the stomach to repose itself before giving anything, even cod-liver oil. Sweet milk with toasted bread, and small portions of meat nicely cooked, so as to tempt the capricious appetite, should be tried. Then ten drops of the Sp. Ammon. Aromat. given every four hours in a wineglassful of some bitter infusion, such as that of Columbo or Gentian, with a little Tr. Auratii, Tr. Cardamomi, or other Carminative. In this way the stomach often regains its tone, food is taken better, and then you may try cod-liver oil, first in teaspoonful doses, cautiously increased. Should this plan succeed, you will be almost sure to observe amelioration in the symptoms.

Nausea and Vomiting.—Not unfrequently the stomach is still more deranged; there is a feeling of nausea and even vomiting on taking food. In the later stages of phthisis, vomiting is also sometimes occasioned by violence of the cough, and the propagation of reflex actions, by means of the par vagum, to the stomach. In the former case, the sickness is to be alleviated by carefully avoiding all those substances which are likely to occasion a nauseating effect, not overloading the stomach, and allowing it to have repose. I have found the following mixture very effectual in checking the vomiting in phthisis. ℞. Naphthæ medicinalis ℥j; Tinct. cardamomi comp. ℥j.; Mist. camphoræ ℥vij. M. ft. Mist. Of which a tablespoonful may be taken every four hours. When it depends on the cough, the remedies advised for that symptom should be given.

Diarrhœa.—This is a very common symptom throughout the whole progress of phthisis, at first depending on the excess of acidity in the alimentary canal, to which we have alluded, but in advanced cases, connected with tubercular deposition and ulceration in the intestinal glands. The best method of checking this troublesome symptom, is by improving the quality and amount of the food. The moment the digestive processes are renovated, this, with the other functional derangements of the alimentary canal, will disappear. Hence at an early period we should avoid large doses of opium, gallic acid, tannin, and other powerful astringents, and depend upon the mildest remedies of this class, such as chalk with aromatic confection, or an antacid, such as a few grains of car-

bonate of potash. When, on the other hand, in advanced phthisis, continued diarrhœa appears, and is obstinate under such treatment, then it may be presumed that tubercular disease of the intestine is present, and the stronger astringents with opium may be given as palliatives.

Cough and Expectoration.—At first the cough in phthisis is dry and hacking. When tubercle softens or bronchitis is present, it becomes moist and more prolonged. When excavations exist, it is hollow and reverberating. In every case cough is a spasmodic action, occasioned by exciting the branches of the pneumogastric nerves, and causing simultaneous reflex movements in the bronchial tubes and muscles of the chest. The expectoration following dry cough is at first scanty and muco-purulent, afterwards copious and purulent. When it assumes the nummular form—that is, occurs in viscid rounded masses, swimming in scanty clear mucus, it is generally brought up from pulmonary excavations. The accumulation of the sputum in the bronchial tubes is an exciter of cough; and hence the latter symptom is often best combated by those means which diminish the amount of sputum. When, on the other hand, the cough is dry, those remedies should be used which diminish the sensibility of the nerves. In the first case, the amount of mucus and pus formed will materially depend on the weakness of the body and the onward progress of the tubercle. Hence good nourishment and attending to the digestive functions is the best method of checking both the cough and expectoration; whereas giving nauseating mixtures of ipecacuanha and squills is perhaps the worst treatment that can be employed. There is no point which experience has rendered me more certain of, than that, however you may palliate these symptoms by cough and anodyne remedies, you thereby render the stomach intolerant of food, and so impede the curative tendency of the disease. On the other hand, nothing is more remarkable than the spontaneous cessation of the cough and expectoration on the restoration of the digestive functions and improvement in nutrition. When the cough is dry, as may occur in the first stages, with crude tubercle, and in the last stage, with dry cavities, counter-irritation is the best remedy, employed in various forms. Opium may palliate, but never cures.

Hemoptysis.—This symptom sometimes appears suddenly in individuals in whom there has been no previous suspicion of phthisis, and in whom, on careful examination, no physical signs of the disease can be detected. On other occasions, the sputum may be more or less streaked with blood; and lastly, it may occur in the advanced stage of the disease, apparently from ulceration of a tolerably large vessel. In all these cases the best remedy is perfect quietude, and avoidance of every kind of excitement, bodily and mental. Astringents have been recommended, especially acetate of lead and opium; but how these remedies can operate, I am at a loss to understand; and I have never seen a case in which their administration was unequivocally useful. I have now met with several cases where supposed pulmonary hemorrhage really originated in follicular disease of the pharynx or larynx, and which, with the supposed phthisical symptoms, were removed by the use of the probang and nitrate of silver solution.

Sweating I regard as a symptom of weakness, and therefore as a common, though by no means a special, one in phthisis. Here, again, the truly curative treatment will consist in renovating the nutritive processes, and adding strength to the economy. It will always be observed, that if cod-liver oil and good diet produce their beneficial effect, that the sweating, together with the cough and expectoration, ceases. On the other hand, giving acid drops to relieve this symptom, as is the common practice, by adding to the already acid state of the alimentary canal, is directly opposed to the digestion of the fatty principles which require assimilation.—*Monthly Journal of Medical Sciences*, Feb. 1852.

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19. *On Bronchitis and Broncho-Pneumonia in Children.*—MM. Barthez and Rilliet have communicated an instructive article, on some points, in the history of bronchitis and broncho-pneumonia in children, to the *Archives Générales de Médecine*, for October and November 1851. The following is an abstract of their memoir.

In children, the inflammation of various portions of the respiratory passages

is not so distinctly defined as in adults. The nares, larynx, trachea, the large and the capillary bronchial tubes, the pulmonary vesicles, and the tissue surrounding them, are often affected simultaneously, or in rapid succession, and generally from above downwards. Sometimes the affection radiates upwards and downwards from the trachea; more rarely the capillary bronchial tubes are first affected. In childhood, in fact, the organs are in a state of vital unity (*sont solidaires*), which is manifested in most morbid processes. At a more advanced age, the organs are more independent, and inflammations are more limited; and then each has its own characters and symptoms, the dyspnœa being in relation to the extent of the disease. In childhood, on the other hand, the dyspnœa, impending suffocation, and other formidable symptoms, attend inflammation of any part of the air-passages. The great nervous impressibility of children, the readiness with which febrile action is set up, the narrowness of the respiratory passages, the absence of expectoration, and the rapidity with which inflammation advances, partly explain the resemblance between several of these affections, which, in the adult, are perfectly distinct.

The want of distinction is in proportion to the youth of the child. In children, however, not yet two years old, it is possible to distinguish the three forms of bronchitis—mild, acute, and chronic, which we have described as occurring in older children. Certain cases of the acute form, as we shall presently show, greatly resemble acute tracheitis.

M. Beau draws a distinction, founded on auscultatory signs, between bronchitis with *sibilant rhonchi*, and bronchitis with *bubbling* (mucous) *rhonchi*. The first form is heard in adults and old persons; it is common in persons who have been already affected, and is not severe. The second form is common in youth and infancy; it attacks weakened subjects, is not likely to recur, is accompanied with fever, and is attended with danger if the dyspnœa persists, and mucous rhonchus is heard in the trachea.

The authors of the memoir, however, do not entirely agree with M. Beau, in the marked distinction which he would draw between the two forms of bronchitis. And the difference in the severity of the general symptoms is much less marked in young children than in adults. When the inflammation is general, there is intense fever, and extreme oppression: and then the *apparent* severity of the two forms is equal. But, as to the *real* severity, MM. Barthez and Rilliet agree with M. Beau; and they explain the circumstance by the following facts.

Sibilant rhonchi depend on the presence of a viscous adherent mucus, which the column of air causes to vibrate, but does not displace; or rather on a partial thickening of the mucous membrane. The latter cause is denied by some pathologists, as MM. Beau, Barth, and Roger: but the sibilant rhonchus is sometimes heard too early for the mucus to have been secreted. Anatomical proof of the congestion is wanting; and it may disappear after death. But the proof may be found in other mucous membranes, as in the congestion of the pituitary membrane in cold, which may end without any secretion, or may give rise to coryza. A similar congestion is very probably produced in the larynx of children, who awake suddenly, threatened with suffocation by laryngismus stridulus; and this congestion may terminate like that on the pituitary membrane. And it will be presently shown, that this congestion may occur, and end in the same way, on the lower part of the respiratory tree. But this is only reasoning from analogy.

Viscid and tenacious mucus cannot, from its nature, be driven by inspiration towards the finer tubes. Where it is secreted, there it produces the sounds, which are readily propagated; so that there may be much noise, and alarming symptoms, though the lesion is slight. The intensity of the dyspnœa will readily be understood to be in relation to the capillarity of the tubes, to their number, and to the amount of obstruction. But we also know, that the tenacious secretion of mucous membranes is scanty; and that, when it increases in quantity, it becomes more liquid, and produces mucous rhonchi.

If the congestion extends rapidly over the bronchial ramifications, the symptoms will be more severe. But it is a frequent character of these congestions to disappear as rapidly as they have been produced; for however short a time

they may be prolonged, they produce exudation, and then the rhonchi becomes mucous.

Bronchitis with mucous rhonchus (*bronchite bullaire*) is necessarily more severe than the sibilant form. The secretion is more abundant, and is more extensive; the inspiratory efforts force the fluid towards the capillary bronchi; the cough, weak or absent, is unable to expel the secretion, which is being increased every instant: and, if a large number of the capillary bronchi be attacked, death may rapidly take place. If the progress of the disease be less rapid, pneumonia may be developed; but this latter affection cannot follow in bronchitis with sibilant rhonchi.

The authors believe, that the difference between sibilant and mucous bronchitis is simply, that the former is the first stage, and the latter a more advanced one; and that the disease may be arrested in the former stage. Can the disease begin with mucous rhonchus? There is no proof; and the first stage may be very short, and may escape observation. Perhaps sibilant bronchitis may be most frequently idiopathic, and mucous bronchitis secondary; and this may be the reason why the latter is less common under one year of age, because measles, hooping-cough, typhoid fever, etc., are more rare under that age.

The authors have, however, observed some cases of idiopathic capillary bronchitis in very young children. They relate some cases, of which we can only afford space for summaries.

Case I.—X., aged 3, was attacked with capillary bronchitis; mucous rhonchi; impending suffocation; emetics, antimony, *pommade de Lausanne*, and leeches, were tried without effect. When the child was *in extremis*, Malaga wine with water, milk, and friction with an ointment of quinine and lard, were employed; marked good results and recovery followed.

There was no difficulty in the diagnosis. The capillary bronchitis was well marked; it was rather a mucous bronchitis. The symptoms were much like those which the authors have described as occurring in bronchitis in children of all ages, but much more severe. On the second day, the symptoms had attained their height. The disease pursued an alarming course; in less than thirty hours after the first attack, the state of the child was desperate. The Malaga wine was suggested by the remembrance of the good effects which sometimes follow the use of tonics *in extremis:* it probably saved the life of the child. The endermic application of sulphate of quinine has often proved useful in the severe catarrhal affections of children, when the fever is of the remittent type.

Case II.—B., aged 19 months, was attacked with slight catarrh; bronchitis with sibilant rhonchus, appeared, threatening asphyxia; she was treated by emetics and antimony; and recovered.

In this case, the disease was soon cut short by the emetics; and these are some of the best remedies which can be used in this form. Yet bloodletting may be required when the febrile symptoms run high, as in the following case.

Case III.—B., aged 4 years, was attacked with frequent paroxysms of fever, with cough and oppression; slight catarrh; subacute bronchitis, with sibilant rhonchus; extreme dyspnœa; very intense fever; no improvement resulted from emetics; the application of four leeches, two behind each mastoid process, caused rapid improvement.

Suffocative bronchitis, with sibilant rhonchus, is of the same family as spasmodic laryngitis. They arise from the same causes, are attended by the same symptoms, appear in the middle of the night, and most frequently end by a return to health, after a very short duration. The analogy is complete when bronchitis, with sibilant rhonchi, has been preceded by an attack of spasmodic laryngitis.

Case IV.—The patient, a child aged 14 months, was seized in the night with an attack of laryngismus stridulus; a catarrhal cough, without fever or dyspnœa, continued for eight days. At the end of that time, tracheitis and bronchitis set in, with vibratory and mucous rhonchi intermixed; there was intense fever and dyspnœa. The treatment consisted of antimony and blisters: the child recovered.

In this case, the symptoms of spasmodic laryngitis, of tracheitis, and of bronchitis, were evident. To the spasmodic laryngitis were referable the nocturnal suffocation, and the harsh cough; to the tracheitis, the difficult, painful, tearing cough, and tracheal stertor; to the bronchitis, the sibilant and mucous rhonchi, and the intensity of the fever and dyspnœa. This case proves how insensible are the transitions, in children, from inflammation in one part of the air-passages to that of another. In this case, more good seems to have been done by the blister than by antimony.

Case V.—The patient, a male child eight months old, had a not very severe attack of nasal and bronchial catarrh; when he was suddenly seized with violent fever, extreme oppression, and frequent cough. The symptoms and physical signs (non-expansion on right side, with bronchial respiration, in addition to the bronchitic rhonchi) were now those of incipient pneumonia—or rather pulmonary congestion—with capillary bronchitis. These signs were removed in twenty-four hours, under the influence of ipecacuanha, calomel, and antimony; and the cure was complete in two and a half days.

MM. Barthez and Rilliet consider that this case should be ranged among suffocative catarrhs. The child, while suffering from slight coryza, was seized, during the course of a mild bronchitis, with sudden and severe symptoms, which rapidly disappeared. The larynx was intact; the principal seat of disease was evidently the lung. Auscultation had pointed out the existence of bronchitis, with sibilant and mucous rhonchi; and, two hours after the severe symptoms had set in, the only appreciable difference consisted in the absence of pulmonary expansion throughout the right lung, and diminution of the murmur, with slight bronchial expiration, at the base. The first of these signs is well explained by rapid congestion, affecting the small bronchial tubes, and narrowing their caliber.

Did the rapidly supervening bronchial respiration indicate pneumonia with hepatization? Hepatization does not take place so rapidly; and requires certainly more than twenty-four hours to go through its stages. Was it the first stage of pneumonia—pulmonary engorgement? In such a case, the vesicles still contain air, the lung is not solidified, crepitant rhonchus is heard, and there is not yet bronchial respiration and dulness. Was there pleurisy with slight effusion? The presence of superficial rhonchi, and the rapid disappearance of the affection, negative this supposition.

A lesion, capable of preventing the air from entering the vesicles, of producing condensation of a part of the lung, and of causing bronchial sounds to be transmitted, is to be sought for in an active and sudden congestion of the parenchyma surrounding the vesicles, which would have the effect of driving the air from them, and preventing its re-entrance. Moreover, one of the characters of these sudden congestions is to disappear rapidly; and hence, in the last case, the congestion disappeared, giving place to a mucous secretion in the finest bronchial tubes, and perhaps in the vesicles; as was evidenced by a fine subcrepitant rhonchus.

The authors remark that this pulmonary congestion is by no means slow in coming on, and is connected necessarily with a weak constitution, or with lying long on the back. It occurs sometimes in robust children, at the commencement of suffocative catarrh, and may be simultaneous with bronchitis. This congestion, connected with capillary and vesicular bronchitis, agrees very well with the short, irregular, incomplete, frequent respiration, habitual in suffocative catarrh.

In such cases as the last, the powers are not destroyed, but are oppressed; but the local effect of this oppression is almost the same as that produced by real debility. Thus, the vesicles or the small bronchi being obstructed, the child cannot overcome the resistance to the entrance of air; hence arises a stagnation of blood in the capillaries, and a congestion, often hypostatic, follows, which may disappear as the breathing is relieved.

On a careful attention to these facts depend various therapeutic indications. In such severe cases, an error may be fatal; and it is still more painful to commit one, when the disease is really not one of those which entirely destroy the functions of an organ. Most commonly, all the danger lies in the obstruction

to the entrance of air; when this is removed, there is almost nothing to oppose the return of health. It is certainly most important to ascertain whether the vital powers are only oppressed, or are really lost. In an originally robust child having broncho-pulmonary catarrh, with active congestion, when the bronchi are not yet obstructed with abundant mucus, bloodletting is useful. But when the fine rhonchi denote the approaching formation of mucus, and when the aggravation of the disease is shown by the abundance of the nasal secretion, the vital powers of the child should be preserved. Emetics then produce sufficient depression; while their action necessitates deep inspirations, which are productive of benefit. The inspirations are also favoured by the warm bath, which induces cough, and also diminishes the febrile heat and irritation. Counter-irritation is also useful.

When the powers are really depressed, and asphyxia is imminent, whether from passive congestion or from want of energy, cutaneous revulsives and stimulant tonics may be of great service.

Case VI.—S., a lymphatic, large child, aged two years and four months, was seized with measles, preceded for some days by catarrhal symptoms. The eruption was not properly developed until the sixth day; on which day, physical signs of pneumonia were observed; they began to disappear about the tenth day. The principal features in this case, as noticed by the authors, are that there were several relapses of the pneumonic symptoms, and yet the child happily recovered. A few facts in this case require attention.

The eruption did not properly appear before the sixth day; on the fourth day, a few spots appeared, but soon vanished. At the same time, the cough increased, the respiration became frequent and irregular, arrested at expiration, as is generally the case in the broncho-pneumonia of children. The cutaneous eruption appeared modified by the pulmonary affection. The bronchial catarrh had been double; but the pneumonia appeared to be confined to the right side; this, however, is not absolutely certain.

MM. Barthez and Rilliet do not believe that there was hepatization, but that the affection described by MM. Legendre and Bailly was present, viz., intravascular sanguineous congestion, capable of expelling the air from the pulmonary vesicles, and of rendering the organ sufficiently solid and impermeable to transmit the bronchial sounds.

The authors conclude with the following remarks on the remedies to be employed in the affections above referred to.

Emetics appear to do good in proportion to the *efforts* to which they give rise. Their benefit, however, has limits. When given inopportunely to weak children, or if their action is too prolonged and violent, they produce a state of depression which favours congestion.

Baths not only calm the fever, diminish the heat of skin, and favour perspiration; but also produce paroxysms of cough, necessitating deep inspiration, which tend to overcome the obstacle to the entrance of air into the vesicles. Yet baths, by being often repeated, may lose this effect.

Blisters and *Vichy-water* have been found useful, both as derivatives and as excitants.—*Lond. Journ. of Med.*, Feb. 1852.

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20. *Chloroform in Infantile Convulsions and other Spasmodic Diseases.*—[Prof. Simpson relates (*Monthly Journ. Med. Sci.*, Jan. 1852) the following interesting case of infantile convulsions, in which he employed chloroform inhalations as an antispasmodic, with a very satisfactory effect.]

The Viscountess —— was confined on the 7th October. The child, a boy, kept quite well till the 17th of the same month, when it was observed by its nurse to have, two or three times during the day, twitchings in the muscles of the face; but they were not so severe as to attract any very special attention. During the two following days, these convulsive twitchings were repeated with rather greater frequency; the hands were observed to be clenched during them, and the thumbs were turned inwards.

On Monday the 20th, the convulsions became far more violent in their character, were more prolonged in their duration, and were repeated with much greater frequency. They continued with little change, and no abatement in

their intensity or frequency, for the next fourteen days. Sometimes they affected the right side of the body much more severely than the left. In the mean time, Dr. Scott and I tried a great variety of means for their relief; but all in vain. The bowels were well acted upon with mercurials, magnesia, &c.; and every separate function attempted to be brought as near as possible to the standard of health. A new wet-nurse was procured, lest the milk might perchance have been proving, as it sometimes does, the source of irritation. The child was placed in a larger and better ventilated room. Ice and iced water were occasionally applied to the scalp. At one time, when the fits became unusually prolonged, and were not only accompanied, but followed for a time, by much congestion in the vessels of the scalp and face, and an elevated state of the anterior fontanelle, two leeches were applied. Liniments of different kinds were used along the spine. Musk, with alkalies, was given perseveringly for several days as an antispasmodic; and small doses of opium, turpentine enemata, &c., were exhibited with the same view. All these and other means, however, proved entirely futile. As I have already stated, it was on Monday the 20th October that the fits first assumed a severe character, and they continued without any amelioration for about fourteen days from that period, recurring sometimes as frequently as ten or twelve times in an hour. At last the child, who had hitherto maintained wonderfully his strength and power of suction, began to show symptoms of debility and sinking; and during the fifteenth and sixteenth days of the attack, the fits became still more violent, and more distressing in their character. They were now accompanied with moans and screams that were very painful to listen to; symptoms of laryngismus and dyspnœa supervened towards the termination of each fit; and in the intervals the respiration, as well as the pulse, continued much quickened.

During these two last days of the disease, the exhaustion became so great, the dyspnœa in the intervals so distressing, and the fits so very violent and constant (seventeen were counted in one hour), that Dr. Scott and I gave up all hopes of the possible survival of the infant. We had exhausted all the usual means of relief. Ultimately, but much more with a view of abating the screaming, laryngismus, and other distressing symptoms under which the little patient was suffering, than with any great hope of permanent relief and cure, I placed the child, on the forenoon of the 5th November, for about an hour, under the influence of the inhalation of chloroform. During this hour there was no recurrence of the fits; but in a short time after the withdrawal of the action of the anæsthetic, the convulsions recommenced with their old violence and frequency. The benefit, however, was sufficient to encourage a longer repetition of the remedy; and from four to eight o'clock in the afternoon of the same day, my assistant, Mr. Drummond, placed and kept the child again under the influence of chloroform, a few inhalations from time to time, of a very small quantity of the drug sprinkled upon a handkerchief, and held before the face of the infant, being sufficient for this purpose. It was specially applied at any threatening of the recurrence of a fit, and during the four hours in question, all convulsions were in this way repressed. When the child was allowed to waken up at eight o'clock, it took the breast greedily, and continued well for upwards of an hour, when the convulsions again began to recur. At last, about twelve o'clock P.M., it was again placed under the inhalation of chloroform, and kept more or less perfectly under its action for upwards of twenty-four continuous hours, with the exception of being allowed to awaken eight or ten times during that period for the purpose of suction and nourishment. During most of this period it was carefully watched by Mr. Drummond, and at last the nurse was entrusted with the duty of adding the few drops of chloroform to the handkerchief, and exhibiting them at any time the child was offering to awaken or become restless.

After this long continuation of the chloroform, the child, on being allowed to waken up, as usual drank greedily at the nipple, and immediately fell back into a quiet and apparently natural sleep. The chloroform and all other formal medications was in consequence discontinued; and *from this time there was subsequently no recurrence whatever of the convulsions.* In about ten days the infant was removed with the family to the country. I have, within the last two days

(December 18), seen the child as it was passing through Edinburgh. It was strong, plump, and well grown for a child of ten weeks, and was, in fact, revelling in the best of health.

In exhibiting the chloroform to this infant, ten ounces of the drug were expended; but of course a very large proportion of this quantity was lost by evaporation, in consequence of the mode in which it was employed.

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21. *Chloroform in Pneumonia.*—In the last number of Henle's *Zeitschrift für Rationelle Medecin*, (Neue Folge, Bd. 1, Heft. I.,) is a very important paper, by VARRENTRAPP, of Frankfort, "On the Employment of Chloroform in Pneumonia by Inhalation." Already, Wacherer and Baumgärtner have used chloroform in this way, and with great success, and, including Varrentrapp's cases, more than two hundred cases of acute pneumonia have now been treated after this method.

Varrentrapp's own cases amount to twenty-three, the first case being treated by venes. and antimony, the rest only with chloroform, except one case, which was bled, and two others, in whom there was pleurisy, treated with calomel and blisters. Of these cases, twenty-one were men and two women; the mean age of the former thirty-one years; the youngest nineteen, the eldest sixty-two; the women were aged twenty and twenty-nine. The mean period of disease at the entrance into the hospital was the fourth day; the chloroform treatment was commenced usually on the following morning. The average number of inhalations was seventy-four in ten and a half days, the smallest number being twenty-seven in five days, and the greatest one hundred and sixty-two in fifteen days. The chloroform was not given to stupefaction, but about sixty drops were placed on a compressed piece of cotton, and the vapour was allowed to enter the lungs for ten or fifteen minutes. If cough was excited, or unconsciousness seemed about to be produced, the cotton was removed for a few moments. Every two three or four hours, the inhalation was repeated. If the first three or four inhalations produced any effect on the head, or irritation of the lungs, this soon passed off. In the majority of cases, perspiration was produced, the pain in the chest was diminished, the cough was less frequent, and there was a general feeling of improvement after even the first inhalation. Varrentrapp enters into a long analysis of the effect on each individual symptom, from which we extract the following:—

The sweat.—If sweating had not previously occurred, it came on after the first inhalation; in no case later than the fourth and fifth. When the disease began to yield, it diminished and disappeared, on the average, on the twelfth or the thirteenth day.

Pain in the side.—Often relief to this symptom followed the first inhalation, but after an hour or two it began to return again; the next inhalation again diminished it, and if it returned again it was very much less intense, and gradually disappeared. The average date of its complete disappearance was from the third to the fourth day after the use of chloroform.

Tightness across the chest.—After the first inhalation, the patient could often at once draw a deep breath; but, on the average, this symptom disappeared, at the same time as the pain in the side.

Frequency of respiration.—The average number being 37.8 per minute on the day of admission; the number decreased daily till the ninth day after admission, when the average was 20 per minute.

Cough.—In all cases, without an exception, the cough was lessened by the inhalation—gradually the intervals between the cough became shorter, while the cough itself became much less violent, and with looser expectoration. The heavy attacks of cough disappeared on an average at the end of the second, or at the commencement of the third day, after the employment of chloroform. In one case, however, they continued to the fifth.

Expectoration.—The changes in the expectoration were dissimilar from those observed after the ordinary treatment. The "sputa cocta," or "critica," were never seen; but either the sputa gradually lost the blood, and slowly diminished in quantity retaining their viscidity to the last, or more frequently became surrounded by a thin, watery fluid, which presented adhesion to the glass; then

the blood disappeared, the sputa lost their glassy character, and became white; and then the viscid portion altogether disappeared. In one case this change occurred on the first day; but the average was from the second to the fourth day.

Fever.—The fever diminished gradually; in one case suddenly disappeared; the pulse very rapidly fell in frequency; it was at eighty or under, on the fifth day, after admission, taking the average of all cases.

Thirst.—This symptom disappeared with the fever.

Sleep.—On an average, good and comfortable sleep ensued on the third or fourth day after the commencement of the inhalation. In several cases, however, even on the second day, there was many hours' sleep. This symptom seemed to be independent of all others, that is to say, it did not appear to have any determined relation to any other special symptom.

Urine.—The condition of the urine was the same as under the ordinary treatment.

Physical signs.—These did not show any deviation from those observed under ordinary treatment. They improved in proportion to the other symptoms. The average period of commencement of signs of retrogression was three and a half days after the commencement of treatment.

Mortality.—One case died, making a mortality of four and one-third per cent. In one hundred and ninety-three cases treated in the same way, and collected by Wacherer, Baumgärtner, Helbing, and Schmidt, the mortality was nine, or four and a quarter per cent. Of two hundred and sixty-six cases treated between 1844 and 1849, by Varrentrapp in the ordinary way, forty-nine died, or fifteen per cent. This would make the mortality under chloroform treatment very favourable; but Varrentrapp remarks that it is not so favourable as it appears; since, in taking indifferently all the patients which come into hospital, many cases are included which are beyond treatment; whereas, in using chloroform, hopeless cases have been excluded. Thus, during the time that chloroform was used, three fatal cases were admitted which, from their severity and complications, were not treated with chloroform, and would probably have equally died had they been treated with it. But, if these three cases are added to the one fatal case of the twenty-three, the mortality becomes eleven and a half per cent. In estimating the mortality, also, it is necessary to pay especial attention to age; and the ages of Varrentrapp's cases not treated with chloroform are not given. The mean age of his chloroform cases was thirty years, the mortality of all cases being, according to Dr. Walshe, six per cent. between fifteen and thirty years, and no less than fourteen per cent. between thirty and forty years. ("On Diseases of the Lungs and Heart," p. 332.) The twenty-three cases are detailed at length at the end of the paper. On going over these cases, it is evident that Varrentrapp's favourable account is borne out by the facts. The improvement produced by chloroform is not sudden and magical; and those who use it with the idea that their pneumonic cases are straightway to get cured, will be disappointed. It is evident, however, that it is a valuable remedy, and probably will be still more useful when employed as an auxiliary than when used (as by Varrentrapp in most of his cases) entirely alone.—*Med. Times*, Oct. 18, 1851.

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22. *On Sumbul in Delirium Tremens.*—By Dr. MEINHARD. Numerous hospital observations at St. Petersburg, show that the root of Sumbul proves a rapid and desirable means of cure of the delirium tremens of drunkards, being in very many cases to be preferred to opium. It is especially in the erethritic form of the disease that it is useful, the excitement being quickly calmed, and a critical sleep with general diaphoresis ensuing. The constipation usually supervening requires an aperient. It is administered as an infusion, or an infuso-decoction (half oz. to six oz.), a spoonful being given at first every hour, and then every second hour, continuing it for some days after sleep has been procured.—*Brit. and For. Med.-Chir. Rev.*, Jan., 1852, from *Schmidt's Jahrb.*, vol. lxx.

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23. *Treatment of Asphyxia Infantum.*—Dr. TOTT states, that he has often succeeded in restoring life in the *asphyxia asthenica infantum* after the failure of

the usual means, by causing a person to stand on a table, and pour cold water from a tea-kettle on to the pit of the stomach. In this way Professor Hasselberg saved many lives.—*Brit. and For. Med.-Chir. Rev.*, Jan., 1852, from *Journ. für Kinderkrand*, xvii.

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24. *Treatment of Diabetes.* J. Hogg states (*Lancet*, Jan. 3, 1852) that he has successfully treated two cases of diabetes with sulphuret of arsenic.

The chief indications of treatment appears, he says, to be the prevention of the elaboration of the saccharine poison in (the *laboratory of life*) the stomach, and to restore the defective power of the digestive apparatus. These ends he sought to fulfil by employing some medicine that would effectually arrest the saccharine fermentation; and he attempted to accomplish his object with a sulphuret of arsenic.

The chemical difficulty that presented itself to him was the conversion of the sulphuret of arsenic into a *soluble sulphuret*, which would not accumulate in the system, and become a more than ordinarily dangerous remedy to deal with. This he was enabled to effect by combining the hydrosulphuret of ammonia with the liquor of arsenicalis.

The formula he adopted was as follows: R. Liquor arsenicalis ʒij; Hydrosulphuret ammoniæ ℥xx; Tinct. hyoscyam., Tinct. lavend. āā ʒij; Infus. buchu ℥viij. M.—A tablespoonful every four hours.

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25. *Physiological Action of Quinine.* A paper by Dr. Alex. Robertson, on the action of quinine in removing ague, was read before the Edinburgh Physiological Society. The object of the paper was to show that quinine acts chiefly as a stimulant, more gradual and permanent in its action, but in other respects similar to the alcoholic stimulant. Dr. Robertson remarked that the action of this drug on the nervous system had been mentioned in a prominent manner by all who had made its physiological effects the subject of experiment: and that there was reason to think that its action on the vascular and digestive systems might be, as in the case of alcoholic stimulants, secondary to the functional changes in the nervous system. The main difference between quinine and alcoholic stimulants, in their effects on the system, was, that while both produced in large doses a species of intoxication, accompanied by vascular excitement, and often by vomiting, &c., the effects of quinine were much more gradually developed, and likewise more prolonged than those of alcohol. Dr. R. argued that this analogy of action was likewise to be traced in the effects of these therapeutical agents in intermittent fever, the paroxysms of which could often be arrested by large doses of alcoholic stimulants not less effectively than by quinine. To the latter remedy he ascribed no *specific* power neutralizing the malarious influence, considering it simply as a permanent and powerful stimulant of the nervous system, sustaining and fortifying it in its reaction against the depressing effects of the ague-poison.—*Monthly Journ. Med. Sciences*, Feb. 1852.

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26. *On the Simultaneous Occurrence of Hyperæsthesia and Anæsthesia of the Skin in Neuralgia.*—By Dr. Turk. During or after an attack of severe neuralgia, there is sometimes a more or less considerable amount of hyperæsthesia of the superficial layers of skin seated over the affected parts, so that not the least contact can be borne. Much oftener, however, the contrary is the case—viz., anæsthesia of the superficial layers over the points of deeper-seated pain. The degree of this superficial anæsthesia is proportionate to the amount of pain in the deeper layers of the skin; and it is sometimes so considerable that nipping the skin with the nails, or blistering it by the application of heat, is unfelt. These opposite conditions of the same part may be observed for some time after the attack of spontaneous pain has disappeared. The two conditions do not always observe the same limits. Sometimes the most superficial layer of the skin only is anæsthetic, and the formation of a moderately thick fold of skin causes pain; while at other times the chorion is anæsthetic, and the formation of a moderately thick fold of skin causes pain; while at other times the

chorion is anæsthetic throughout, and thick folds of the skin may be pinched up, pain being only felt at the subcutaneous layers.

The intensity of the anæsthesia diminishes in proportion to the distance from the site of the spontaneous pain. An entire side of the body has been observed to be anæsthetic; but the insensibility has usually become so diminished towards the boundary, as to be incapable of being tested by irritation by the finger, though readily so by the application of hot or cold bodies. This hemiasthænia sometimes extends to the wall of the mouth, and side of the tongue. Oftentimes it has been only observed over the greater part of half the body, certain portions of the trunk or head being exempted. In some cases the functions of the senses have also been found disturbed.

The hyperæsthesia of the deeper layer of the skin rarely assumes such an extension as the anæsthesia of the superficial ones; though cases have been observed in which it, too, has occupied one entire half of the body. In double-sided neuralgia, the anæsthesia and hyperæsthesia are also double, being more intense on one side than the other, if that is the case also with the neuralgia. In some cases, both sides of the body are affected symmetrically, having their limits then drawn horizontally.

Besides the occurrence of these conditions in neuralgia, it not unfrequently happens, according to the author's experience, that in typhus there is a more or less intense hyperæsthesia of the deeper layers of the skin in various parts of the body, especially the calves of the legs. It is sometimes so considerable, that the half-soporose person utters expressions of pain under the influence of even but moderate pressure. Examined after the fever had run its course, no abnormal conditions of sensibility were observed in some of the patients; but in others spontaneous pains, accompanied by hyperæsthesia and anæsthesia of different parts (especially the leg and foot), and in different degrees, remained for weeks.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1852, from *Froriep's Tagsberichte*, 1851, No. 273.

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27. *On the Signs of the Hereditary Transmission of Cerebral Disease.*—At a meeting of the Académie des Sciences in Paris, on December 15, 1851, Dr. Moreau read a memoir on the hereditary predisposition to cerebral diseases with the object of determining whether this predisposition could be recognized by any particular signs.

Before stating the results at which he had arrived, the author directed attention to certain zoological facts, which he took as his starting-point, and which also explained the results he had obtained. They were as follows:—

The manner in which the organization of the parents affects that of the offspring, so as to produce resemblance, is subject to constant and invariable laws. Resemblance is not communicated from parents to children by the transmission of certain isolated *traits*, but rather by the transmission of two perfectly distinct and separately defined series of organs. One series comprehends the external configuration; the other comprehends the nervous functions. Transmission takes place according to fixed laws; when one parent gives one series, the other gives the opposite.

Applying this law to man, M. Moreau has ascertained that, in 164 cases out of 192, when pathological modifications of that part of the nervous system specially connected with the intellectual functions has revealed an hereditary resemblance to one of the parents, the external physical resemblance has been manifestly transmitted by the other parent.

He arrives at the following conclusions:—

1. The law of the hereditary transmission of series of organs is true, within certain limits, for man as for animals.

2. Cerebral affections and external resemblance are transmitted indifferently by either parent; but not commonly by both.

3. In a family, one or more of the ancestors of which have been insane, the hereditary disease will in all probability attack those of the children who present little or no resemblance to those with whom the disease has originated; while, on the other hand, it will spare those in whom there is a physical resemblance.

28. *Remarks on Diseases of the Heart.* In the *Gazette Médicale de Strasbourg*, M. Forget has published some interesting comments on cardiac diseases. He enumerates two laws; the first, that dilatation of a cavity always occurs behind the obstruction, and contraction of the cavity, on the contrary, takes place before it. Thus obstructive diseases of the aortic valves induces dilatation of the left ventricle, while contracted mitral, existing alone, induces what is called concentric hypertrophy of the same cavity. When both valves are contracted, the lesion of the ventricle will correspond with the relative degrees of obstruction in the two valves. It is not, however, absolutely necessary that valvular disease should be present to induce these changes. The ventricle will dilate if it disgorges itself less readily than it fills, and it will diminish if it receives less than a normal quantity of blood.

M. Forget has ingeniously applied these facts to diagnosis. When one valve only is obstructed, it is easy to recognize it by the seat and qualities of the bruit; but when both valves are diseased, the information derived from the sounds is insufficient. It is then, he says, that the value of the above knowledge is found. "If there is narrowing of both aortic and mitral valves, the greatest amount of obstruction may be known to be at one or the other, accordingly as the ventricle is, or is not dilated."

M. Forget shows, further, that a knowledge of these circumstances is not a mere matter of scientific curiosity, but has also a real bearing on practice.

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29. *Remarkable Case of Foreign Bodies in the Stomach and Duodenum—Complete Obstruction of the Bowels, and Mechanical Displacement of Organs.*—John Marshall, Esq. read to the Royal Medical and Chirurgical Society the following remarkable case:—

A tradesman's wife, aged 41 at the time of her death, who had borne six children—the last in 1844—a tall, well-formed woman, who had suffered from the following symptoms: In December, 1842, fourteen days after the birth of her fifth child, she vomited a washhand-basinful of blood. For forty-eight hours subsequently she was unconscious; the pupils were dilated, and the pulse hardly to be felt. She recovered slowly, and her complexion always afterwards retained a sallow hue. The last labour, in 1844, was unattended by any similar or other ailment, and she recovered quickly. In the autumn of 1845, she suffered from pain at the epigastrium and in the left groin, accompanied with frequent vomiting. A hard tumour, the size and shape of an ordinary placenta, was found in the left groin, movable in a transverse direction when the patient turned from side to side. This had been felt by the patient for many months; when it moved it caused nausea, but no pain, nor was it tender to the touch. She had pain between the shoulders, shooting into the left breast, and suffered much from flatulence. The catamenia had not appeared for three months, and she thought she was pregnant. The bowels were constipated, the vomiting continued, with occasional mixture of blood in the matters thrown up; she became much emaciated, and so feeble that her death was expected. She recovered, however, after taking nothing but small quantities of brandy at short intervals for two days. She gradually regained strength, and looked almost as well as usual. During the five following years, she continued in tolerable health: the pain and occasional sickness, constipated state of bowels, and occasional œdema of face and ankles, were the principal indications of impaired health. The catamenia had never returned since 1845. In October, 1850, after a return of the old symptoms of incessant vomiting, &c., she sank, after an illness of three weeks.

Post-mortem examination, eighteen hours after death.—The stomach was found reaching, at its pyloric end, to the arch of the pubes, its form resembling that of a champagne-bottle; the duodenum lay partly under the sigmoid flexure of the colon; the pancreas was also drawn out of its natural position; the liver was large and pale, and the gall-bladder full of blood. Nothing remarkable was observed in the other organs of the abdomen and pelvis, except that the cœcum and colon were small, and had lost the character of large intestines. No ulceration was to be found throughout the whole length of the intestinal canal, nor any adhesion or other sign of peritoneal inflammation.

The stomach contained in its lower half, nine ounces of pins of a purple-black colour, not corroded, all bent or broken, many very pointed. The coats of the stomach were much thickened; the duodenum contained a mass of pins very tightly packed, of various shapes, similar to those found in the stomach, and wholly obstructing the tube. Their weight was about a pound. The husband of the patient had never seen her put pins into her mouth, but her son said that he had observed his mother biting pins, and believed that she swallowed them; and stated, moreover, that he had occasionally taunted her with the fact, when she corrected him. It appeared that her appetite was always capricious, occasionally very keen; and her sister informed the author that, when a child, she was in the habit of eating starch and slate-pencil, and that she had seen her biting pins. At seventeen years of age she had vomited blood, and was ill for some time afterwards.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

30. *Popliteal Aneurism cured by Compression.*—Wm. Reeves, Esq. of Carlisle, records in the *Lancet* (Jan. 3, 1852), a case of popliteal aneurism in a tall, stout man, thirty years of age, weighing fourteen stone, and with large muscular limbs, cured by pressure. The pulsating tumour came on after jumping from the top of a hedge. The affected knee measured seventeen and a half inches round, the unaffected knee fourteen inches. The instrument employed, and which was devised by Mr. Reeves, consists of a large sheet of tinned iron, to encase the limb, with a projecting piece over the groin, in which there is a groove, and a nut adapted to receive a screw, with a ball to make the pressure with. The screw can be made to slide up and down this groove. There is another groove in the case, over the artery, as it passes through the tendon of the triceps, fitted with a screw and ball for making pressure here also. "Before applying this machine," says Mr. R., "it is necessary to envelop the limb in three or four folds of flannel, then apply the instrument, and strap it on. It can be strapped to accommodate the feelings of the patient, as the edges of the sheet-iron overlap behind. Pressure may now be made either at the groin or where the artery passes through the tendon of the triceps. If at the groin, I used a seven-pound leaden ball surrounded with cotton, as the pad here; its pressure is so much steadier than that of any other pad made of a lighter material. The Dublin men, I believe, first recommended a weight; and a valuable recommendation it is. On the point of this screw is a movable washer, with three small projecting pieces of wire for embracing the ball, for the prevention of any slipping. When thus applied, a few turns of the screw is sufficient to stop the flow of blood in the artery. If pressure is desired lower down, I have a movable washer on the end of the screw, with a firm pad applied to it also, and a few turns of the screw is often sufficient. At any rate, the pressure required is bearable enough for a sufficient length of time to bring about the end demanded.

"The best apology for this instrument is, that the pressure is only felt at the point the pad comes in contact with; the counter-pressure is diffused over the whole of the limb, or so much of it as to make it a matter never mentioned or hinted at by the patient. My patient, though asked frequently if the pressure was at all intolerable, unhesitatingly answered—

"'No; I can bear it very well, especially as I can so easily alternate it; yet I must confess I would rather be without it, were it not positively demanded.'"

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31. *On Aneurisms of the Extremities.*—M. Chassaignac relates, in the *Archives Générales*, t. xxv., a case of popliteal aneurism, and offers the following interesting general remarks:—

1. *Inequality of the thickness of the coagulum of an aneurismal sac.*—The coagulum is sometimes traversed by an accidental longitudinal canal, maintain-

ing the circulation through the aneurism. An examination of this canal, first in an aneurism of the lumbar aorta, and subsequently in various popliteal aneurisms, shows that it never traverses the coagulum in its centre, but that the thickest portion of the coagulum always occurs exactly opposite the portions of the walls of the vessel that have undergone greatest dilatation.

2. *Non-obliteration of collateral arteries arising from the walls of an aneurism.*—It might be supposed, *à priori*, that the distension of an aneurismal pouch by a coagulum, and the diseased condition of the arterial walls, must inevitably lead to the obliteration of vessels springing from it. In many aneurisms that he has examined, M. Chassaignac has found that, while in all other parts of the aneurismal sac the internal and middle tunics have been replaced by atheromatous substance, at the orifices of the collateral arteries which opened into the tumour, the internal tunic completely preserved all its properties. The orifice of each artery opened into the centre of a disc, as clean and as completely defined at its circumference as if punched out of a sound artery. The cause of the preservation of these sound parts of the tunic, when all around is so diseased, is a curious subject of inquiry; but upon such preservation seems to depend the maintenance of the circulation in those arteries at the orifice of which it exists. In several preparations of aneurism examined, M. Chassaignac has found that the sole collateral arteries which were obliterated were just those unprovided with the protective disc.

3. *Diagnosis.*—It is remarkable, in the case in question (produced by the kick of a horse), how long the diagnosis continued obscure. In fact, only three weeks prior to the operation, so experienced an observer as M. Cruveilhier could detect no pulsations. So rapid, however, at last, did the progress of the aneurism become, that it doubled its size within the forty-eight hours prior to the operation.

The *auscultation* of this tumour furnished M. Chassaignac with a new occasion of pointing out the difference which exists between the simple *souffle* heard in aneurism of the limbs, and that which results from varicose aneurism, dependent upon a communication between the artery and vein. This last is a confused, tumultuous, boiling sound, which once heard can never be forgotten. The *longitudinal propagation* of this boiling sound is a sign first indicated by M. Chassaignac, the sound being heard with great intensity when the ear is applied in the course of any of the veins communicating with the artero-venous aneurism, whether situated above or below the point of communication. In ordinary aneurism, there is a *bruit de soufflet* or *de râpe*, distinctly intermittent, and audible neither above nor below the tumour; while in varicose aneurism the sound resembles a continuous subterraneous boiling noise, propagated longitudinally.

4. *Pain during the application of the ligature.*—Notwithstanding the certainty that no nerve was included, the patient complained of severe pain when the ligature was tightened; and M. Chassaignac's experience has taught him that, however isolated the nerves may be, there is always severe pain at the moment of constriction—a pain differing, however, from that consequent on the inclusion of a nerve. When a nerve is included, the pain is immediately referred to the part where it is distributed; while, when this accident has not taken place, the patient does not indicate any especial part as suffering.—*Brit. and For. Med. Chir. Rev.*, Jan. 1852.

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32. *Treatment of Diseased Joints by Incision.*—Mr. Gay read to the Medical Society of London (Nov. 8, 1851), a paper on this subject. He commenced by observing that to the present time there was no department of surgery in which the powers of art have been comparatively so feeble as when applied to the relief of those diseases of the joints which, from their results, might be termed destructive. Hence, let the articular surfaces of the joint be bereft of their cartilages, a sinus or two be formed around it, and the health of the patient shows symptoms of exhaustion, and the joint, and probably the whole limb, are doomed to amputation. He adverted to the causes of the removal of the cartilage from joints, and gave it as his opinion that, in addition to primary, synovial, and osseous disease, the cartilages were sometimes removed by absorption, in

consequence of degeneration of their own tissue, without any traceable affection of the contiguous textures. In all cases of removal of cartilage, the tissue degenerates into a kind of fibrous texture, antecedent to the final process; and as portions of cartilage were sometimes observed to be removed without any apparent disorder of either the synovial or osseous surfaces, and, moreover, as cartilage was known to be inadequate to its own repair, Mr. Gay thinks it most probable that the portions of cartilage so removed had first spontaneously degenerated, and then become absorbed. Mr. Gay went on to remark, that if a series of joints be examined in which the removal of the cartilages is taking place, the appearances will be as follows: If it be presumed to follow disease of the synovial capsule, the cartilage will be found in some to maintain its connection with the bone, whilst it is thinned by absorption at its free surface. In others, however, the bone is found inflamed at various points of its connection with the cartilage; and at these points the cartilage is loose, and may be peeled off, so that portions of thin attached and unattached cartilages are found in the same joint. When entirely denuded, or almost so, the surfaces of the bones may exhibit simply a state of increased vascularity, which precedes the effusion of plastic lymph for the purposes of reparation by anchylosis, or may be observed to be in a condition of ulceration. This ulceration may exist as a simple abrasion, or be of considerable depth, but there is generally a uniformity in this respect over the whole surface. With this state of ulceration there is also softening of the osseous structure, and frequently disintegration; the contents of the joints consisting of broken up cartilage and osseous and other *débris* together, or osseous matter with ichorous or sanious discharge. When the disease originates in the bone, as in by far the greater number of cases, in Mr. Gay's opinion, it does, the separation of the cartilage is effected by another process, which he termed "shedding," and the cartilage is then reduced to the condition of a foreign body within the joint. Shreds of cartilage thus situated in a joint may be observed after months and even years of disease; and as on the other hand its separation from the articular extremity of the bones may be accomplished in an almost incredibly short period of time, it is fair to infer that the time thus passed must have been occupied in the process of its extrusion from the joint, and that this is accomplished, neither by ulceration nor absorption, but disintegration by, and solution in, the discharges of the joint. But the bone itself being diseased, adds its exfoliated or disintegrated particles to the cartilaginous debris, which, with its own discharges, constitute generally the contents of a joint in which the disease commenced in its bony elements. The result of these discharges is to set up inflammation in the sound textures contiguous to the joint, and general systemic irritation. Sinuses form around the joint; the disease extends itself; the ligaments become ulcerated; the spongy tissue of the bones infiltrated with pus, and broken down; osteophytes form around the heads of the bones; abscesses extend themselves into the surrounding soft parts, separating the different structures, and setting up unhealthy and destructive action amongst them; and, in short, a climax is arrived at in which the local mischief reacts upon the constitution, and life is only to be preserved at the sacrifice of the joint, or of the limb, Mr. Gay inferred from these remarks, of which only an imperfect abstract has been given:—

1. That there appears to be no reason why diseases affecting the constituents of a joint should be slower in their course of reparation than diseases of any other part or structure.

2. That the removal of cartilage from its osseous connection in a joint is occasionally effected by absorption, but most frequently by a process of "shedding," or exfoliation.

3. That cartilages thus shed become, by their being pent up in a joint, sources of local and constitutional irritation, and thus promote disease in the osseous and other structures appertaining to a joint, supposing that such affections do not exist primarily; and in case they do, these cartilages, by the same influence, maintain and extend these diseases also.

4. That the natural outlets for these discharges, the sinuses, are inadequate for that purpose.

5. That, therefore, the exfoliated contents of a diseased joint have to be

minutely broken up by, or dissolved in, the discharges of the joint, in order for their removal; processes which are necessarily of a very protracted order, and which account for the tardiness in general characteristic of joint diseases.

6. That the exfoliated contents of a joint, after its cartilages have been removed, and even after extensive disease has been set up in the bones and other textures, have only to be completely removed, and processes of reparation will, in the majority of instances, immediately commence.

Mr. Gay then alluded to the usual modes of treatment, and remarked that the operation of resection of a joint is not only a useless but an unphilosophical mode of treatment for diseased joints. In the first place, primary disease is generally limited to one of the articular extremities of the joint; it is, therefore, a useless mutilation to remove more than that disease, supposing the operation were for a moment admissible. But, moreover, dissections show that disease originating in bone, when arrived at that stage at which the operation of resection is generally employed, has extended itself far beneath the surface, and frequently along the shaft for a third of its whole length, so that resection cannot accomplish its purpose, which must be manifestly the removal of all disease. The plan Mr. Gay recommends, then, is free and deep incisions made along each side of a joint, so as to lay open its cavity freely, and to allow of no discharges being by any possibility retained within its cavity. They should be made of such a length, and so treated that they do not heal into the form of sinuses. They should be made, if possible, one on either side of the joint, and in the direction of the long axis of the limb. They should extend into the abscesses in the soft parts so as to lay them open. If sinuses exist, the incisions should be carried through them, if this can be done without departing from a slight curve. If either of the bones be carious or necrosed, the incisions should be carried deep into such bones, so as to allow the dead particles of bone to escape. Ligaments which stand in the way of a free discharge from the joint should be cut through. Of course important vessels should be avoided. The wound should be kept open by pledgets of lint, and free suppuration encouraged. The constitutional powers have in each case rallied immediately after the operation; and as the discharges from the joint have altered in character and become healthy, which they in general do in the course of two or three weeks, these become invigorated, and improve with the improving joint. Mr. Gay then narrated some cases in corroboration of his views: Peter D——, aged thirty-eight, admitted into the Royal Free Hospital, in 1842, for diseased elbow-joint, of three years' standing, with ulceration of the cartilages and sinuses. The joint was opened on either side, and healed in eleven weeks. The next was a case of a disease in the articulation between the first and second phalanges of the thumb of eighteen months' standing. Cured in six weeks. The third case was that of a man with "long-standing" disease of the tarsal articulation. One sinus led to the interior of the joint. Incisions were made on each side of the foot, and complete repair by anchylosis followed. The fourth case was that of a little boy with strumous constitution, with disease of the knee-joint consequent upon suppuration of the bursa behind that joint. The little fellow was reduced by fever to a very low ebb, so that bed-sores formed on parts of his body. The joint was opened, and anchylosis took place at the end of four months, the knee bent on the thigh. The fifth case was that of a German, with disease of the wrist-joint, which had resisted treatment. One sinus led into it. One incision was made at the back of the joint, and anchylosis followed, but was not observed to be perfect for six months. The sixth case was that of a young Irishwoman, with disease of the tarsal articulation, following upon traumatic erysipelas of the leg and foot. She was reduced to an exceedingly low condition, and from cough with bloody sputa, night sweats, (according to Dr. Heale,) the physical symptoms of the chest, and extreme emaciation, she was supposed to be phthisical, and so diseased, that amputation, which was supposed to be the only remedy for the disease, as far as the joint was concerned, was forbidden by the authority of Dr. Heale. Mr. Gay made an incision on either side of the foot in this case, and the change both in the joint and constitution was remarkable. Her health rallied from that moment, and the joint assumed a more healthy aspect. In a fortnight the

joint was fixed by the exudation of lymph between the bony surfaces, and in five weeks perfect anchylosis had taken place, and the wounds had healed. She soon after left the hospital, and was, a week or two since, to Mr. Gay's knowledge, in perfect health. The seventh case was that of Highley, reported at the time in THE LANCET. The eighth case was that of a little boy with disease of the articulation of the first and second phalanges of the thumb. In this case the cure was not accomplished. The incisions resolved themselves into sinuses, and after several months the necrosed phalanx came away.—*Medical Times* and *Lancet*, Nov. 22, 1851.

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33. *On Anchylosis of the Lower Jaw.* By Dr. WERNHER.—S. R——, æt. twenty-three, when three years of age underwent severe salivation, after which the jaw remained in a fixed state. Notwithstanding the absence of masticatory power, he was well nourished. The jaw was quite immovable, firm pressure or traction exerting no effect upon the position of the teeth. The incisors and molars were indeed, for the most part, wanting, the roots of such as did exist projecting beyond the alveoli of the diminutive jawbone. The jaws were so far separated, that with some trouble the little finger could be introduced in front; but from the anterior molars on each side backwards, bony arches connected the upper and lower jaws. The buccal mucous membrane was attached to the gums at the anterior edges of these arches, but the temporal and masseter muscles remained free. Speech much resembled that which takes place with the mouth closed; and food which did not require mastication was introduced between the defective teeth. To remedy this state of things, the gums were separated by an incision from the cheeks and lips, and a broad portion of the connecting arch on either side removed by a small saw. The jaws could now be expanded, by aid of a mouth speculum, to the extent of half an inch, some painful stretching of the muscles being induced. The patient was enabled, too, to voluntarily close the mouth again, proving that twenty years of inactivity had not destroyed the functions of the joints and muscles. After several weeks' perseverance in gradual dilatation, a still wider expansion was obtained, enabling the patient to chew food that was not too hard, which, indeed, the loose state of his teeth also prevented him biting.

Anchylosis of the lower jaw may occur in three localities. 1st. The head of the condyle may become fixed in its glenoid cavity. This is the most frequent form, examples of which are recorded by Sandifort, Blandin, Cruveilhier, Howship, Holscher, Hyrtl, &c. 2d. The coronoid process may become attached to the zygomatic arch. Of this but two observations are recorded, one by Sandifort ("Museum Anat." vol iv.), and by Sebastian in his "Essay on Anchylosis," published at Groningen, 1826. 3d. The alveolar processes may become conjoined. Of this there are three examples on record, besides the one now narrated, which are to be found related in Walther's "Museum Anat." in "Rust's Magazin," Band 1, and in Bonnet's (cited from Kunholz) "Maladies des Articulations."

Of the fifteen cases of anchylosis of which Dr. Wernher has thus been able to collect accounts, both sides of the jaw were affected in seven, and one side in eight. In the three examples of osseous connection of the alveoli, the incisors were somewhat separated. It has been supposed by Cruveilhier and others, that anchylosis of the one side entails that of the other by the complete immobility it induces; but in seven of the fifteen cases quoted, the joint on one side remained quite free. How little prolonged immovability is a cause of anchylosis, may be judged of by the case now recorded, in which it had continued for twenty years, and by others of a much longer continuance recorded by Walther, Cruveilhier, Howship, and Kunholz—facts applicable to the question of anchylosis in general, and opposing the theoretical views of several eminent surgeons.—*Brit. and For. Med. Chir. Rev.*, Jan. 1852, from *Oppenheim's Zeitschrift*, Bd. xliv.

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34. *On Ulcers external to the Sphincter Ani.* By JOHN HILTON, Esq.—These affections give rise to the most distressing and seemingly anomalous symptoms, and are very often overlooked from want of due attention and imperfect inves-

tigation. A very careful and circumspect examination should be made in all cases where a patient complains of considerable pain in passing his motions, whether accompanied or not by streaks of blood upon the feces.

As the sensibility of the ulcer and the character of the accompanying symptoms depend greatly upon the exact situation of the ulcer, I shall divide them into three distinct classes, in relation to their position:—

1. Ulcers external to the sphincter ani.
2. Ulcers within the circle formed by the internal sphincter muscle.
3. Ulcers internal to the sphincter ani.

The first case which I will adduce is an example of the first class—viz., ulcers external to the sphincter ani.

Ulcer external to the Anal Aperture.—T. C., ætat. 22, was admitted into Guy's Hospital, under my care, November 27th; states he is the driver of a stage wagon; has lived temperately, and enjoyed general good health. About two months since he first complained of pain whilst passing his motions, which has continued to increase up to the present time; it was supposed to depend on piles, for which he was treated, but without deriving any benefit. On admission into the hospital, he still complains of severe pain whilst passing his motions, and for one hour after, as well as continual soreness and uneasiness around the anal aperture; and on examination several small ulcers, irregular in form, were discovered, varying in depth, though mostly superficial, around the verge of the anus. These, on being touched with the finger-nail, caused him pain and soreness, though not to be compared with that acute sensibility which exists when the ulcer is situated in the mucous membrane within the sphincter. He has been the subject of syphilis twice; but there does not appear to be any connection between this and his present disease. He was ordered to keep in bed in the recumbent posture, and to take castor oil two or three times a day, so as to keep up a gentle action on the bowels; also to apply an ointment, consisting of unguentum opii ʒj et unguentum hydrargyri fortius ʒiij, two or three times a day.

December 3. He has found great relief from the application; his bowels were regularly opened, and the motions passed without causing him much pain, whilst the small ulcers show a disposition to heal. From this time he continued to improve up to the 14th, when he felt quite well, all pain and uneasiness having entirely disappeared; the ulcerated fissures had completely healed, and the bowels were moved without causing him any inconvenience.

On reviewing the symptoms in this case, his sufferings, you will remember, were limited to about an hour after the act of defecation had been completed—a period of time unusually short, and of a much less protracted character from that in other cases, which I shall have to bring before your notice before we quit the subject. This case also fully indicates the necessity for a careful personal examination, as I am aware that this patient had been under treatment for piles for some time previous to his admission into the hospital, and without any benefit.

The indications for treatment are—first, to keep the patient in the recumbent posture, so as to relieve congestion of the hemorrhoidal veins, through which, you will remember, venous blood is returned to the vena porta, contrary to the laws of gravitation, but which is accomplished by means of valves so arranged and adapted as to support a column of blood of a definite length, and of certain weight. And it is owing to some of these valves having become broken down, that the remaining healthy valves are called upon to support a greater column of blood than natural, giving rise to those enlargements and yieldings of the veins, just above the sound valves, which constitute the true venous hemorrhoids. The second indication is to keep the bowels open by mild laxatives; and of these the oleaginous appear to me by far the best; for in administering castor oil, which is the medicine I generally employ, it acts on the entire course of the intestinal canal, and at the same time lubricates the hard exterior of the fecal mass as it passes through the rectum; and, indeed, in all diseases of the rectum you will find in castor oil one of the mildest and best purgatives you can employ.

The painful symptoms in the case I have adduced were soon partially relieved

by these means, whilst great benefit was unquestionably afforded by the local application, consisting of the unguentum opii and unguentum hydrargyri fortius. The opium appears to prove beneficial by diminishing the excitability and irritability of the ulcer; but the *modus operandi* of mercury as a local application, or in what manner it affects the molecules of the system when given internally, is at present but very imperfectly understood. That the combination is an advantage, I have no doubt whatever. The patient suffered most severely during the act of defecation; and this, though very frequent, yet is not always the case, as the pain is often more severe after the act of defecation has been completed.

Very minute fissures, so small as scarcely to be perceptible, even on careful examination, yet when situated on the verge of the anus, may give rise to the most acute pain whilst the stools are passing; and I have known several instances where persons in full business occupation have been quite unable to pursue their avocation in consequence of this source of pain and uneasiness about the rectum, as well as from the mental anxiety and physical depression with which these affections are so commonly associated. One case strikes me very forcibly at the present time; and as I think an illustration of the subject under consideration will be the more likely to impress it on the memory, I will briefly relate it. A gentleman actively engaged in business, was suffering from all the symptoms above alluded to, and had been under treatment for some time, without any benefit. The rectum had been examined, but without affording any explanation of the cause of the symptoms. Being satisfied, however, in my own mind, that it depended on some minute fissure about the anal aperture, which had hitherto escaped observation, I made a very careful and minute examination of the part; and, on making pressure around the verge of the anus, the patient soon expressed severe pain when I touched a particular spot. To this my attention was now especially directed; and, after manipulating so as to make the skin as tense as possible around the margin of the anus, I at last discovered a very minute fissure, scarcely a line in breadth, in that situation; and on touching it with my finger-nail, the patient instantly suffered the most exquisite pain. This case was treated by touching the fissure with nitrate of silver reduced to a fine point by rubbing it with wet lint; and after three or four applications, the patient got completely well, and quite free from those harassing and distressing symptoms with which he had so long been troubled. The fissure in this case appeared to have originated in a small follicle which had suppurated and never properly healed. This follicular disease does not always assume the form of an ulcer or fissure, and will not unfrequently be met with in practice, where the enlarged follicle may be seen in a state of ulceration, the ulcer not being more than a pin's head in size, very sensitive to the touch, and painful during defecation, which may be cured by one or two careful applications of nitrate of silver to the ulcerated points.—*London Med. Gazette.*

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35. *Dieffenbach's Operation for Prolapsus Ani.*—M. Dieffenbach followed four distinct methods, according to the nature of the case; the preliminary treatment in all consisting in a dose of castor oil the day before, and an enema of warm water immediately preceding the operation. The patient is bent forward over a table, the nates being separated by an assistant.

1. *Diminution of the anal opening by excision of folds around it.*—After returning the rectum, one of the cutaneous folds, which surround the anus like radii, is seized by a pair of sharp-hooked forceps half an inch from the opening, and the fold is then cut away close within the opening by a pair of straight sharp-pointed scissors. Four, five, or even more strips are successively removed in the same manner, so that the anus is surrounded by a wreath of bleeding rays. The more lax the skin, the broader must be the strips removed. The wounds must be at equal distances from each other; for when two are close together, the small intervening portion of skin is easily destroyed by suppuration, and one wound results, which is so large that the subsequent cicatrix and stretching of the skin are injurious. Cold-water dressing is then employed. In slight cases, where the prolapsus only consists of one or two folds of mucous mem-

brane, which can easily be replaced, this plan is to be adopted, and it is generally successful. In more severe cases it is either useless, or but of temporary utility.

2. *Excision of wedge-shaped pieces from the anus* is recommended when this part is greatly weakened, but not entirely paralyzed, and when the prolapsus consists of large, fresh, unaltered folds of mucous membrane, which only project during the act of defecation. When the projection is only on one side, but one wedge is excised; when it is on both sides, or when it forms a sort of ring, a wedge must be removed from each side. The prolapsus is returned; a sharp hook is passed within the anus as far as the edge of the part returned, and carried through the membrane and first fibres of the internal sphincter ani; the hook is drawn a little outwards, and the wedge cut away with a small scalpel. When the prolapsus is not great, the wedge may be small; but in more severe cases, Dieffenbach has often excised two wedges, an inch wide on each side. The edges of the wounds are immediately brought together by strong sutures, and cold-water dressing used. The result is most satisfactory, the cure complete, and relapse never occurred in Dieffenbach's practice.

3. *Excision of parts of the anal ring and of the callous prolapsus* is indicated when the opening is very much widened, the prolapsus old and large, the folds of mucous membrane dense, firm, and hard, or loose and spongy, with large permeating veins, the patient having suffered from continual hemorrhage. The operations upon old and hard, or soft and spongy prolapsus, differ, but in both the part must be protruded at the time of operating. In the first class of cases, the projecting fold is seized by a pair of forceps, and a strong suture passed through its base; the ends are kept on opposite sides, while the fold is removed by a pair of scissors, in a semicircular direction around the anus; the ends are then brought together, and serve the purpose of fixing and drawing forwards the edge of the wound, while fine sutures are passed to unite them. This is all that is necessary in cases where the anal opening is not very large. When it is so, a wedge must be excised from it, in the manner described in the preceding paragraph, the two wounds forming together a T. In very severe cases, it is dangerous to do too much at once, and it is far better to complete the operation after two or three intervals. The convolutions having been removed, and the wound healed, after a month or so, when the patient is quite well, the wedge may be excised.

4. *Extirpation of the spongy prolapsus*, which consists of the convolutions of the loose sanguineous mucous membrane of the rectum, is performed in the manner just described when the prolapsus is partial, and the anal opening narrow. When it is total and large, the operation is first performed on one side—that of the greatest protrusion—in a different manner. The part is seized by a pair of curved forceps, resembling those called entropium forceps; and the convolution is then cut away by scissors, close to the edge of the forceps. The edges of the wound are immediately closed by fine sutures, as severe hemorrhage often comes on. The part removed includes the centre of the prolapsus, and extends at one end to the skin surrounding the anus, and at the other to the mucous membrane of the rectum. The rectum is cleaned by injections of cold water, the patient kept in bed, and cold applications used. An opiate is given to prevent defecation during the first day. Sometimes this alone effects a cure; in other cases, it is necessary to repeat the operation on the opposite side, after the patient has quite recovered from the effects of the first. Dieffenbach relates some remarkable cases, in which patients who had been extremely reduced by continual bleeding and suffering, were thus restored to perfect health.

5. *Cauterization.*—When the external and internal sphincters of the anus are paralyzed, the anal opening is often so large that a doubled fist can easily be passed through it, and the intestine can only be kept within it by some mechanical contrivance. Removal of parts of the prolapsed intestine would be useless in such cases, as fresh protrusion would continually take place. Excision of parts of the borders of the opening also proves useless, as the cicatrices soon become soft and yielding. The actual cautery, however, suffices to effect a cure, acting partly upon the nerves, and partly by the formation of

contracting cicatrices. The anus being protected by the introduction of a ball of charpie, a cauterizing iron, of the size of a large walnut, is applied upon the skin surrounding the anus, and repeatedly carried slowly around the opening so that an eschar is formed, an inch or an inch and a half in width, and the skin appears as if burnt to leather. The iron must be carried close to the line of connection between the skin and mucous membrane. The charpie is removed from the anus, a smaller quantity introduced, and a wad of cotton wool laid upon the eschar. The patient is placed in bed, and an opiate given. Cotton wool is applied until separation of the eschar at the edges commences. Stimulating poultices are then used. After complete separation, the suppurating surface is dressed simply, and castor oil given. When cicatrization is complete, the patient is perfectly cured. Dieffenbach has found the opening so much narrowed, that bougies had to be used for some weeks; but this is rare, and the general result is most gratifying both to surgeon and patient.—*Brit. and For. Med.-Chir. Rev.* Oct. 1852.

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36. *Case of Obturator or Thyroidal Hernia, successfully relieved by Operation.* By Henry Obre. (*Proceedings of Royal Med. Chirurg. Society*, June 24, 1851.)—After commenting on the extreme rarity of this form of hernia, and stating that he had been unable to find any record of its having been detected and relieved by operation during life, the author relates a case in which he operated successfully. The patient, a female, aged fifty-five, the mother of a large family, was seized with symptoms which led her medical attendant (Mr. Gardener) to believe that she was suffering from rupture. She denied that this was the case, and a careful examination convinced Mr. Gardener that there was no hernia in the usual situations of that disorder. A little below the femoral region on the right side, however, he detected a degree of hardness resembling a small gland, and deeply seated; with some general fulness about the part. The author saw this patient on the fourth day after the symptoms had begun; at this time, she was suffering extreme abdominal pain in the umbilical region; during the previous twelve hours, her vomiting had been stercoraceous and incessant; the countenance pale and contracted; voice faltering; pulse weak, small, and intermitting—in short, all the symptoms of pending dissolution from strangulated intestine were present. On careful examination, nothing could be detected but a slight degree of fulness in Scarpa's triangle on the right side; that on the opposite side being well marked; on using firm pressure with the ends of the fingers over the neighbourhood of the femoral artery, and a little below the saphenous opening, a distinct hardness was to be felt, slight in extent, but giving the impression as if the sheath of the vessels was being pressed on. The state of the patient was such as to induce the author to propose to make an incision into the upper part of the thigh, down to the hard structure, in the hope that he might find confined intestine low in the femoral canal. He made a straight incision into Scarpa's triangle, as in the operation for tying the common femoral artery, beginning about three inches below Poupart's ligament. When the cribriform fascia was opened, and the saphenous opening exposed, no hernial sac was found, but the hardened structure could be felt lying deep to the inside of this opening. The dissection was with some difficulty continued downwards; the fascia lata was divided, and the pectineus muscle exposed. The fibres of this muscle were divided transversely for about an inch and a half or two inches, and a hernial sac was exposed, which rose up into the wound to the size of a pigeon's egg. The finger, being passed along the sac, entered the obturator opening. The sac was opened, and the intestine was found to be a portion of the small gut, blue and congested. The opening through which it passed did not tightly enclose its neck, but it was considered prudent slightly to divide the edge. In doing this the saphena vein was wounded, and it was necessary to apply a ligature to its upper part. This was the only ligature required. After the operation, no medicine was given; in the course of the day the bowels acted three times, and in the course of a few days the patient had quite recovered.

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37. *Case of Obstruction of the Colon relieved by an Operation performed at the Groin.* By James Luke, Senior Surgeon to the London and St. Luke's Hospi-

tals. (*Proceedings of Royal Med. Chirurg. Society*, June 24, 1851.)—The subject of this report was a man aged sixty, who, on Dec. 16, 1850, first complained to the author of feeling generally unwell. He had no pain, but his countenance was depressed, his eyes sallow, and his tongue coated. The bowels were confined, and, lately, medicines had acted with difficulty on them. An aperient was ordered, and, on the following day, he passed a small lumpy motion, but without relief to the symptoms; castor-oil was ordered, but after a time was rejected by vomiting. On the 18th, there was no relief from the bowels, and he vomited everything he took. From this time he progressively got worse in spite of all the means resorted to for his relief. He complained of pain chiefly about the region of the cæcum. The transverse arch of the colon could be felt distended and tympanitic. A careful observation of the case had led the author to believe that there was obstruction in the bowel about the sigmoid flexure of the colon, and it was resolved as a last resource to operate upon the patient. The operation was performed on the 23d. Not thinking it prudent to assume that the conclusion respecting the seat of the obstruction was certainly correct, the author determined to adopt that operation which would give him some opportunity of extending his search, provided he did not find the obstruction at the point where it was supposed to be. He, therefore, opened the abdominal parietes near the groin, by an incision four inches in length, a little to the outside of the course of the epigastric artery, the lower extremity of which incision terminated a little above Poupart's ligament. The peritoneum was opened to the extent of about two inches. On passing the finger down the surface of the intestine, which now protruded, a diseased mass could be felt, which appeared to encircle the intestines. The bowel was then opened above this part; a large quantity of feculent matter came away, and the patient expressed himself as relieved. On now passing the finger into the bowel, it was found to be impervious about two inches below the aperture. After the operation, the recovery of the patient was rapid. On the second day, fæces passed per anum, and continued to do so for more than a month, when their passage through the natural opening ceased, it was again partially restored, but from this time the greater part of the fæces passed by the wound. This is closed by a well-fitted pad, and he has been enabled since to pursue his ordinary occupation almost without interruption. The author then proceeds to remark on the danger of protracted delay in attempting to relieve such cases, a delay which is, however, to a great extent rendered necessary by the difficulties of diagnosis. The distension of the colon, and the evidence afforded by the proper introduction of the long tube, are pointed out as the two means of diagnosis on which reliance may be generally placed for the purpose of determining the seat of obstruction, when it is situated at the lower part of the colon. The advantages of the operations of Amussat and Littre are then compared, and the author, while admitting the advantage gained by operating in the loins, as proposed by the former—of not opening the peritoneal cavity—yet thinks that the operation in the groin offers certain advantages which render it in many cases preferable. By the operation in the loins nothing more could be done than opening the intestine; but this might in some cases be improper—as where obstructions were produced by fibrous bands overlying the intestine, or by strangulations, the result of causes acting exteriorly to its tunics. In these cases, the proper treatment is to divide the bands, or relieve the cause of strangulation. In the event, too, of an error of diagnosis, the opening in the loins does not provide any facilities for correcting the error. The danger of total failure of affording relief consequent upon this state of things must, therefore, be attributable as a demerit to the operation in the loins. There are, besides the minor evils in this operation, that the opening cannot be conveniently attended to by the patient himself, and that there exists frequently a great disposition to contraction, arising from the great depth of the wound, which requires renewed surgical interference. In all these particulars, with the exception of the necessary attendant of peritoneal section, the operation of opening the abdominal parietes at the groin, in all cases of obstruction, or suspected obstruction, in the lower part of the colon, appears to the author to be the operation which should be preferred. It affords facilities for modifying the treatment, either by opening the intestine, when in-

capable of relief by other means, or by dividing or removing any existing cause of strangulation. It enables the surgeon to extend his search within a limited range, in the event of the diagnosis proving incorrect; it allows him to open the bowel as close as possible to the seat of obstruction; and it secures to the patient the facilities for attending to his own comfort which appear almost a necessary condition to make life endurable under such circumstances.

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38. *On Amputations in Children.* By M. Guersant.—The amputations at the *Hôpital des Enfants* are of frequent occurrence, not less than from eighteen to twenty taking place annually; being usually performed for white swelling or other chronic disease. M. Guersant is, however, no advocate for hasty operations in such cases, as the lymphatic habit upon which the disease of the joint depends may often be ameliorated, and a valuable, though an imperfect, limb be preserved. Much depends upon the social position of the parents. The working man has not at his command those resources which may be required for years during an endeavour to preserve the limb of the child; and after the operation the latter may be apprenticed to many trades, even though he has a wooden leg. The child placed in easy circumstances can command prolonged medical attendance, sea-air, change of climate, or whatever may be deemed beneficial, and amputation need not be performed until all other means have been exhausted. After a long period, however, all the chronic disease in a scrofulous child suffering from arthritis seems to concentrate itself in the diseased joint; and upon the removal of this, his health may become re-established. Amputation frequently succeeds better in debilitated than in very strong and vigorous children.

Whenever possible, M. Guersant prefers the months of May, June, and July, for the operation, as unfavourable complications are of more common occurrence in the cold and changeable seasons of winter and spring. The child requires but little preparation; the means which have already been employed for the improvement of its general health, as iodine, bitters, cod-liver oil, &c., all placing it in the best condition for undergoing the operation. If a large eater, the food should be somewhat diminished two or three days before; and any existing diarrhœa must be arrested by anodyne injections and bismuth.

M. Guersant sometimes employs the oval operation, but hardly ever the circular. In most cases he prefers the flap, which renders the co-operation of the assistants easier, occasions little inflammation or suppuration in children, frequently allowing of union by the first intention, and affords a better covering for the bone. Chloroform is employed, and the principal artery of the limb carefully compressed, so as to avoid hemorrhage. In very hot weather, the edges of the wound are united by some points of suture, and the stump left exposed to the air. When bandages are employed, the stump is dressed daily. On the evening of the operation a little broth is allowed, next day a stronger soup, and the day after that sometimes a little roast-fowl.

By observing these rules, M. Guersant finds, as a general rule, that eight or nine cases in ten recover. If erysipelas occur, leeches are applied to the nearest lymphatics; and if these do not suffice, a circular blister is placed around the stump; emetics and purgatives, but especially the former, being given. In cases of purulent resorption, he has obtained some benefit from aconite. If the surface of the wound takes on a grayish colour, and becomes covered with false membranes, chlorined water or lemon-juice is the best application. When union by the first intention does not take place, the inner lip of the wound should be stimulated, and then strapping applied; and when fistulæ occur, they will usually be found dependent upon small portions of bone tending to necrosis.—*Gaz. des Hôp.*, 1851, No. 54.

[A writer in the *Bull. de Thérap.* (tom. xl. p. 81) observes that M. Guersant did not lose a single case of amputation during 1850, though the thigh, arm, foot, and shoulder were among the parts removed. The greater success of operations on the young has long been known, and is usually attributed to the greater vitality of childhood, and the absence of mental disquietude. However this may be, M. Guersant's especial success is probably, in a great measure, due to his habit of ordering good, nutritious diet as soon after the operation as

possible. Under the influence of this, the children rapidly recover strength and flesh, the wound assumes a healthy aspect, and the colliquative diarrhœa, so common prior to the operation, ceases. Abstinence is ill borne at this tender age, and most of these children have become exhausted by suppuration prior to the operation.]—*Brit. and For. Med.-Chir. Rev.*, Jan. 1852.

39. *A large Uterine Calculus removed.* By Prof. Paolo D'Andrea, of Trani.—Signora Filippa Spalluci, of Trani, aged eighty-six years, of sanguineous temperament and middle height, had always enjoyed rude health, nor had she ever suffered from calculous concretions. In her youth, her frame was firm and muscular. She married when twenty-four years of age, and at thirty gave birth to a son. She became a widow at 60.

For four years she had been constantly afflicted with a sensation of great weight in the region of the uterus, pain in the back, extending to the thighs, and impeding their movements; leucorrhœal discharge; severe pruritus, and a burning sensation in the vulva; pain and uneasiness in the bladder, and dysuria, subsequently followed by incontinence of urine; which last symptom, from the alkaline odour it occasioned, rendered her condition insupportable both to herself and those about her.

On the 7th of last January, the patient's sufferings were still further increased by the occurrence of partial prolapse of the uterus, and Professor D'Andrea was called in to see her. On examination with the finger, and afterwards with the sound, he satisfied himself that her case was one of uterine calculus, and, without loss of time, he proceeded to remove it. He made an incision, of about an inch in length, into the cervix uteri, at the left side, which was sufficient to permit the introduction of a forceps. Having seized the stone with the instrument, guided by the fingers in order to avoid including the soft parts, the operator found great resistance to his attempts to withdraw it; he, therefore, introduced the index finger of the right hand to ascertain the cause of the obstruction, and discovered that the portion of the calculus opposite to the fundus of the uterus was covered with a membrane. This it was, therefore, necessary to cut in a longitudinal direction, from above downwards, guiding the point of the bistoury with the left hand while operating with the right. He again seized the calculus with the forceps, and, with an oscillating motion, and the aid of pressure, he succeeded in extracting it. After the operation, fomentations of chamomile were applied. On visiting the patient next day, he found everything going on well; the portions of the membrane which enveloped the stone that remained adherent to the uterus, were successively detached by a slow process of suppuration, and without any unfavourable consequences. In a few days the patient was convalescent.

The calculus was two and a half inches in length, and the circumference towards the larger extremity four inches; it weighed about four and a half ounces. Its shape was pyriform, the larger end being covered with a smooth layer, which extended to the middle of the concretion; while the remaining portion presented a granular appearance, and its tapering form clearly indicated where the false membrane had been attached. The calculus, from its appearance and dirty white colour, seemed to be composed of urates and earthy phosphates; but an unwillingness to destroy it, as a pathological specimen, prevented its being subjected to chemical analysis. The foregoing case is remarkable for the great weight of the uterine calculus, and for the success which attended an operation performed on a woman of eighty-six years of age. It may be well to add that, on the 20th of the following March, Professor D'Andrea was again called to visit the same patient; she then complained of severe pains in the labia, extending to the anus, and suffered from a copious bloody and ichorous discharge. On examination, extensive ulcerations, incrusted with earthy phosphates, were found in the affected parts.—*Il Raccoglitore Medico di Fano*, 1851, p. 472.

[Cases of this nature, though rare, are occasionally met with. We have seen, in Dr. Montgomery's possession, a uterine calculus about the size of the one described by Professor D'Andrea, but we do not know the chemical composition of it. They are, doubtless, originally fibrous tumours, which, in process of

time, have undergone calcareous transformation; and, when divided, they present an irregular, as it were, cellular structure, instead of being solid, as we might expect. That such was the origin of the present calculus, is confirmed by the coating of the so-called membrane, which probably was a portion of the uterine and mucous tissue that had formerly covered the fibrous tumour.]—*Dublin Quarterly Journ. Med. Sc.*, Nov. 1851.

OPHTHALMOLOGY.

40. *Structure of Cataract.*—Dr. LEBERT stated, a short time ago, before the Surgical Society of Paris, that he had no faith in certain ammoniacal preparations which had been supposed capable of producing resolution in cases of incipient cataract. He examined crystalline lenses somewhat altered in structure, and found very important changes. In hard cataract, for instance, there was an opaque, granular substance interposed between the lamellæ of the lens; this substance is beyond the action of the absorbents, as the lamellæ themselves are horny and atrophied. In soft cataract there is seen in the crystalline cells an effusion of a milky fluid, and in this fluid crystals of cholesterine can be distinguished, the lamellæ being at the same time softened and hypertrophied. None but a surgical treatment can in such cases be followed by a successful result. It was shown during the discussion that those cases which were benefited by Gondret's ammoniacal ointment were not cases of incipient cataract, but instances of an early stage of amaurosis.

41. *Aneurism by Anastomosis in the Orbit.—Ligature of the Common Carotid Artery.*—H. H. WALTON, Esq., read a case of this to the Royal Medical and Chirurgical Society. He stated that Mr. Bell, who first described and named the disease, included under that head other vascular tumours, and several unallied growths. He then passed on to the true nature of aneurism by anastomosis, its characteristic of pulsation, when sufficiently superficial, and arterial *souffle;* and gave the particulars of a dissection of one, which consisted of tortuous arteries, communicating freely, and dilated into sinuses or canals, the walls of which were thin. Allusion was made to want of knowledge of the accompanying veins, and the imperfect method of determining the question by injection alone. The particulars of his case were these: A girl, aged two months, was brought to the Ophthalmic Hospital, with a prominent globe, without any indication of the true nature of the disease; but, when four months old, the eye was more prominent, the conjunctiva was studded with large blood-vessels, and an arterial *souffle* was audible. Pressure lessened the protrusion for a few seconds. These symptoms increased rapidly, and the author tied the carotid artery. Not a single bad symptom followed; and, in three days, the reduction was so marked that the lids were closed over the globe during sleep. Now, after several months, the child is well, and the eye very nearly like the other. The author dwelt on the fact that the free anastomosis at such early life was no objection to the operation, because, although coagulation might not occur, there was a partially emptied state of the vessels, till the collateral circulation was fully established; and that the tone of the vessels not being lost, they adapted themselves to their reduced contents, and became confirmed in their diminished bulk. The usual cause of failure in tying the vessels going directly into such tumours was pointed out; the seeming desideratum when the ligature is to be useful being that the entire region should be influenced, and its vitality reduced. The author objected to the recorded cases of Mr. Travers and the late Mr. Dalrymple being true aneurism by anastomosis, considering them to be common aneurism; he pointed out the difference; and concluded by showing that, when the ligature of the carotid is not in itself sufficient for a cure, it may be subservient to the success of other means, which alone

would have been inapplicable or useless. A sketch of the patient was exhibited.

The President said, there were one or two points on which he desired information. First, whether the pulsations of the tumour were detected without the aid of the stethoscope; and, secondly, when the ligature separated, and what kind of ligature was used. It was not within his knowledge that the operation of tying so large an artery had been before practised at such an early age—four months, he believed. It was important to know that it could be done successfully. In those cases where *ramollissement* of the brain had been caused by this operation within his knowledge, the patients had passed the middle period of life.

Mr. Haynes Walton said, with regard to the pulsation, he had not been able fully to satisfy himself of its existence, even with the aid of the stethoscope. He himself was not satisfied as to the day when the ligature came away. He thought it separated on the twenty-third day.

The President said, a doubt had been expressed as to whether the cases narrated by Mr. Travers and Mr. Dalrymple were really examples of aneurism by anastomosis. He had attended Mr. Travers's patient after the operation, for several years, and he considered the case a mixed aneurism by anastomosis. It consisted partly of sacculated veins, and partly of dilated arteries. He had not seen Mr. Dalrymple's patient, but from the account given, the disease seemed to be similar to that in Mr. Travers's case.

Dr. Snow remarked, that he had expected that when the carotid was tied the tumour would diminish in size considerably, but such was not the case. It did so twice under the action of chloroform; but again enlarged as that influence passed away. It diminished gradually after the operation, but he thought it would have done so at once. He did not know whether the same thing had happened in other cases or not.

The President mentioned a case in which Mr. Travers tied the carotid, and the tumour gradually diminished in size in that instance.

Mr. Barlow said that he had been struck by the observation made by the President, that most of the cases of softening of the brain which had come within his great experience, as results of tying the carotid artery, had happened after the middle period of life. This fact seemed to point at the existence of more or less arterial disease at the time of the operation. It would be of great interest to examine with proper minuteness, not only the large, but also the small vessels of the brain, in cases of softening from this proceeding. With regard to the changes of the latter vessels, it seemed clear that their fatty degeneration led commonly to softening and apoplexy. He might particularly refer to the researches of Mr. Paget in proof of the reasonableness of this view. Should the nutrition of the brain be impaired to the extent which a manifest and extensive degeneration of its small blood-vessels would imply, he could not help thinking that the organ would be in a most unfavourable state for so grave an interference with its circulation as the tying of the carotid would occasion.

The President thought that such could hardly be the case, as it had occurred in at least one instance where the artery was tied for a wound; the man died from the *ramollissement*. In that case, he thought it hardly probable that disease should be going on in the minute vessels of the brain, although it might be so in other cases. His own view was that the ligature of the principal artery caused such derangement in the circulation as to induce the softening by depriving the part affected of its blood—a change analogous to gangrene elsewhere.

Mr. Streeter inquired what period of time had elapsed between the ligature of the artery and the death from the softening of the brain, because he had been present at a lecture by the late Sir A. Cooper, where he showed the brain of a man on whom he had first successfully tied the carotid artery, the man dying subsequently from apoplexy, caused by the rupture of the communicating branch, which had enlarged in consequence of the operation. He suggested to Mr. Walton the propriety of watching his case, and of ascertaining the nature of the compensating circulation. This Mr. Walton promised to do.

MIDWIFERY.

42. *An Abstract of Five Hundred and Eighty-three Post-Mortem Examinations of the Uterine Organs, made at St. George's Hospital from* 1841 *to* 1850; *illustrating the Pathology of the Uterus, Fallopian Tubes, Ovaries, Broad Ligaments, and Vagina.* By GEORGE POLLOCK, late Curator of the Museum, and Lecturer on Anatomy. (*Proceedings of the Royal Medical and Chirurgical Society*, Jan. 27, 1852.) The records of the "statistics" of disease, founded on accurately-recorded post-mortem examinations, especially of the uterine system, is a branch of medical literature which, perhaps, of all others, has been much neglected; and the author had not met with any work in which such a record as the following, of post-mortem examinations of the uterine organs, can be found. The bodies of 583 women were examined in a period extending over ten years; and out of this number, 265 cases were found affected with disease in some form or another.

Fibrous Tumours.—Out of 265 cases, thirty-nine were affected by the deposit or growth of fibrous tumours in the uterus. In thirty-eight of these cases, the tumours were connected with the walls of the body of the uterus, either imbedded within them, or pendulous therefrom. In the thirty-ninth case, the tumour was attached to the cervix. In twenty-one cases, the tumours were single; but in one of these instances, in which the tumour was small, and in the upper part of the body, the os was much enlarged, and in structure resembled that of the tumour. In six of the twenty-one cases, the tumours projected into the cavity of the uterus, one very large, without a pedicle, and three were pendulous; one of which latter had so distended the uterus and vagina, that death followed sloughing of the vagina, urethra, and neck of the bladder. In eighteen cases the tumours were double or more numerous, and in five of these some of the tumours projected into the cavity. In two of these cases, the tumours had escaped into the vagina, and were much ulcerated on their surfaces. In one case a calcareous covering surrounded the tumour, and the same process of generation was observed in its interior. In one case, two tumours projected into the cavity of the peritoneum, and, connected with the uterus by thin long pedicles, they readily moved in the abdominal cavity. In a second case, a large tumour attached to the anterior wall projected into and filled the pelvis. In two cases ligature had been applied to the pedicles of tumours. In one case the patient died *before* the separation of the tumour; in this case there was a second tumour: in the other case there was no second tumour; the patient died of peritonitis *after* the separation of the tumour. The age of the youngest person in whom fibrous tumour was found was twenty-six; and this was the only case under thirty. Several were between thirty and forty; the oldest was sixty-eight. Taking the 583 cases as the guide, the average of women affected by this disease is nearly seven per cent.

Cancer.—Cancer of the uterus existed in thirty-eight cases, not, however, confined to the uterus alone, but implicating, in many instances, the adjoining parts. In twelve of these cases, "cancer" of some other viscera (not including the organs of generation) was present; and in four of these cases the breast was affected. In twenty-three of these cases, more or less ulceration existed; and in nine of them, some communication had been formed, either between the uterus, bladder, vagina, and rectum. In one case, ulceration had occurred into the cavity of the peritoneum; and in a second case, the peritoneum between the bladder and rectum was nearly perforated. When cancer exists in the uterine organs, with ulceration, sudden collapse coming on, followed rapidly by death, may thus be accounted for and anticipated, especially when the disease is confined to the upper portion of the uterus. A lady was suddenly seized with pain of severe character in the region of the left groin; this continued unabated, and independent of all remedies. About the end of two months, it suddenly subsided, after the discharge of pus from the vagina, but shortly recurred, and continued unrelieved. Within four months of the first symptoms, she died; and only within two days of her death did alarming symptoms appear; these were chiefly of great depression. After death, a small

encephaloid tumour was found in the upper part of the uterus, softened in its interior, discharging very slightly into the uterus; but the peritoneal covering was just perforated, and allowed the suppuration from the tumour to escape into the abdomen. In fifteen cases, the cancerous matter existed as tumour, without ulceration. Six of these presented all the characteristics of scirrhus; in each case there was generally more than one deposit or tumour. In one case the scirrhous deposit was infiltrated among and in the pelvic viscera. In one case, there were simply small scirrhous tubercles of the vagina in the submucous tissue; but there also existed, in this case, encephaloid disease of the liver. In six out of the fifteen cases, the form of deposit was encephaloid. Four cases were affected with encephaloid tubercles in the walls of the uterus; and in one the encephaloid matter was infiltrated in the substance of the uterus. In one case, the deposit was of the colloid variety. The youngest person in whom cancer of the uterus was found was twenty-three years of age; she was also affected with cancer of the breast. A second case was twenty-seven. The oldest was sixty-two years old.

Results of pregnancy and abortion were observed in nineteen cases. In most of the cases of abortion, the uterus was larger than usual, in some being the size of the head of a full-grown fœtus. The muscular structure, in several cases, was found much softened, flaccid, and readily lacerated; the mucous membrane often dull-coloured, congested, and even in one case gangrenous. In most cases there were traces of the adherent part of the placenta to be observed, and a shreddy appearance of the inner surface of the part corresponding to this position. In two cases abortion followed operations for strangulated hernia; in two cases erysipelas appeared the immediate exciting cause; in one case the complication of epilepsy existed; the abortion was most probably owing to diseased placenta, the latter being in the condition commonly known as hydatid placenta. In one case an encephaloid tumour appeared to be the urgent cause of abortion. In one case of cancer the fœtus had apparently been dead for some time, but was retained. In one case syphilis was the apparent cause of abortion; five cases were attacked by peritonitis, subsequent to abortion, and death ensued; four were fatal from phlebitis. In one, retroversion following delivery, the uterus became so wedged in between the rectum and bladder that retention of urine, most extensive dilatation and inflammation of the bladder, and subsequently sloughing of the whole urethra and surrounding cellular tissue, took place, and produced death.

Alterations in structure of the uterus were observed in twelve cases—alterations which were of a doubtful character; that is to say, with some suspicions of cancer, or dependent on external mischief. Three cases gave evidence of induration of the substance of the uterus, one being extremely hard, not enlarged, in a person sixty-four years old. One in the body and neck was so hard that it was cut with great difficulty; this was in a person aged twenty-five. One in which the posterior lip only was remarkably hard. In one case the body was much enlarged, the neck elongated, and structure indurated; the neck and lips were extensively ulcerated and flocculent; in a person twenty-six years of age. In one case the cervix was remarkably hard, and of a dense white fibrous structure; this patient also had encephaloid disease of the breast. In these cases, the structure of the uterus was found softened—one in a case of dropsy; another after peritonitis following removal of an ovarian cyst. In one case, obliteration of the greater part of the cavity had occurred in a person thirty-seven years of age. The uterus was partly destroyed in one case by an abscess in the pelvis, and in another much congestion of the interior of the uterus attended an abscess in the neighbourhood.

Alterations of form, size, or position of the uterus occurred in twenty-nine cases. In three, position was altered: one was elongated, and drawn towards a hernial sac; one was anteverted, and one displaced by an ovarian tumour. In sixteen some enlargement occurred: one in the case of a girl, seventeen years old, affected by chorea; one in a case of menorrhagia. In a case of phthisis, the cervix was thickened and neck elongated. The uterus was found enlarged in one case of diseased heart; in a case of scarlet fever; in one case of dropsy; one in a case of pneumonia; two in phthisis; two in fever; three

were of twice their natural size; in one case the uterus was drawn upwards by a tumour and its cavity thereby dilated. In eight cases the uterus was smaller than usual, most of them being under twenty years; one case occurred in a woman aged sixty-four, a condition of atrophy not very rare in advanced life; in two cases extensive prolapsus had occurred.

An unusual condition of the cavity of the uterus without actual disease occurred in six cases. Bloody fluid existed in the cavity in four cases, apparently menstrual. It has often occurred to me to examine the bodies of women reported to have commenced menstruating a day or two before death, yet no evidence of the local secretion or symptom of its presence were observed. In two cases coagula were found in the cavity—one in a case of chorea—one in a case of kidney-disease.

Congestion of the uterus was observed in twenty-one cases. This apparently depended on, or co-existed with, some general constitutional disturbance. The condition itself was not attended with alteration of structure, nor indication of incipient disease. In four cases, death was caused by fever; in three cases, by peritonitis; in one, it was attended with chorea; in one, by mania; in five, some disease of the brain existed; in one, disease of the heart; in one case, there existed phlebitis; in three, pleuritis; in one, rheumatism; and in one case, pleuritis, with general congestion of all viscera. In all the cases, there was some constitutional disturbance.

The mucous membrane of the uterus, cervix and os, and the vagina, was observed to be diseased or altered in its condition in twenty-three cases. In fourteen, some ulceration, or an appearance resembling ulceration, of the mucous membrane, was observed. Two occurred in patients with diseased hearts; in one, the mucous membrane of the vagina was highly congested and ulcerated near the os; in the other case, the os uteri was rough and congested, the membrane very superficially ulcerated; if "ulceration" can be the term applied to this condition of the mucous membrane. Two cases accompanied disease of the kidneys: in one, the membrane of the vagina and os was congested, and on the side of the vagina and os were several aphthous ulcers; in the second, the membrane of the vagina and os was grayish and thickened, and covered with purulent secretion; on the posterior lip were two small ulcers. In a case of chronic peritonitis, the os was congested and superficially ulcerated; in the interior of the upper part of the body of the uterus, a small spot of ulceration existed in the mucous membrane. In a case of rheumatic fever, in the cavity of the uterus, there was a small ulcerated spot. One small superficial ulcer of the os occurred in a case of pneumonia. Two instances of superficial abrasion and minute ulcers of the os occurred in fatal cases of "fever." In two cases of diseased liver, there was abrasion of the mucous membrane round the os in one; in the other, the os was congested, and superficially ulcerated. In a case of phthisis, the follicles of the os were inflamed and ulcerated. In one case, superficial abrasion of the posterior lip, with two cicatrices of the posterior wall of the vagina, was accompanied by abscess of the pelvis. In one case, extensive ulceration of the side of the vagina, communicating with diseased bone. In nine cases, the alteration was not attended with ulceration. In one case, the mucous membrane was pulpy, after erysipelas. In three cases, it was vascular about the os, one being in a case of diseased heart, one in phthisis, and one in inflammation of the brain. In a case of diseased heart, the mucous membrane of the uterus was congested, and blood effused underneath it at the os; in another case, the membrane was covered with pus, and the submucous glands enlarged; gonorrhœa was the supposed cause of the inflammation of the parts. In a case of diseased heart, the mucous membrane was covered with a white reticulated secretion. In one case, it was thickened, congested, and formed a flat, vascular prominence, in a woman eighty years old. In one case, several little pendulous mucous tumours hung from the inner surface of the neck.

Scrofula of the uterus existed in five cases. In a girl at sixteen, the cavity was filled with scrofulous matter, and the lining membrane entirely destroyed; the Fallopian tubes were also distended with the same secretion; the deposit did not extend beyond the os. There were also scrofulous tubercles in the brain and lungs. The second case was associated with phthisis. The inner surface

of the uterus and Fallopian tubes were ulcerated, and their cavities, filled with scrofulous deposit. The third case of a girl, aged eighteen, had extensive deposit in the uterus and tubes; the ovaries also had deposits of scrofulous matter in them, and there was general scrofula. The fourth case occurred in a person aged thirty-nine, was of a similar nature as regards the uterus, and was attendant on phthisis. The fifth case had the deposit round the body of the uterus, not in its cavity or substance; it was also accompanied with phthisis.

Mucous polypus was found in one case, connected to the posterior wall about half an inch within the os.

Imperforate vagina occurred in one case. The occlusion depended on the obliteration of about an inch and a half of the vagina. The case was operated on, and died soon after the operation and evacuation of the contained fluid.

Extra-uterine fœtation had occurred in one instance; death followed rupture of the Fallopian tube, in which the fœtus and placenta had been contained. The tube burst into the peritoneal cavity, and extensive hemorrhage followed. The fœtus was found in the cavity of the peritoneum.

Fistula between the vagina and rectum was seen in one case affected with phthisis.

Tumour of the urethra occurred in one case. It was about the size of a hazel-nut, of a dark venous colour, apparently not cancerous, and sprung from the inner surface, close to the orifice.

The Fallopian tubes and broad ligaments were affected in thirteen cases. In two instances they were bound down by adhesions. In one case, a simple fatty tumour was found in the tissue of the broad ligament. In four cases, simple serous cysts were connected with the broad ligament. The subjects, in three of these, were under twenty-one years of age. In one case, the extremity of the Fallopian tube was filled with pus; in another, a cyst, with pus, was situated in the cellular tissue of the tube. The Fallopian tube was obliterated at the inner extremity in one case, and at its other extremity dilated into a cyst filled with inky fluid. In another case the extremity was dilated, and contained dark fluid; but the tube was pervious.

Tumours of the ovaries, not cancerous, were found in four cases. One case had a cartilaginous tumour in both ovaries. In one ovary a fibrous tumour was found, the uterus being at the same time similarly affected. In two instances calcareous masses were deposited in the ovaries.

Cancer of the ovaries existed in eighteen instances; six were of the encephaloid variety, and solid in structure; eight were encephaloid combined with cysts. In four cases the ovaries were the seat of scirrhus. Out of eighteen cases, four were affected with cancer of the breast; in four the uterus was also affected; and in one case there was a cancerous tumour of the abdomen. In nine cases the ovaries were alone the seat of cancer. The age of the youngest affected was twenty-two; the age of the oldest, sixty-three.

Cysts of the ovaries occurred in fifty-one instances. In thirty of these the cysts were of the simple serous kind; in fourteen there existed but a single cyst; in sixteen there were more than one. In seven cases the cysts were complicated with abscess; out of these, in one, there was a clear cyst of the left, and pus in a cyst of the right ovary (after ligature of a uterine polypus). In one the abscesses are multilocular, and on one side opened into the rectum. In one a large cyst filled with pus occurred after phlebitis; in another, pus in a cyst attended cancerous ulceration of the uterus. In one case cysts occurred on both sides, some clear, others filled with blood, and one contained pus (after ligature of uterine polypus). In one case a cyst of pus and putrid lymph was complicated with fibrous tumour of the uterus. In one case both ovaria contained cysts with pus, apparently scrofulous, in a case of phthisis. In three cases "congenital cysts" were found; their contents were fatty matter, hair, and spiculæ of bone. In five cases cysts of the ovaries contained blood; two of these cases occurred in young women who suffered from chorea. In a multilocular cyst of the ovary, cholesterine mixed with thick, tenacious fluid was found. In one case a large cyst had been removed during life; the patient did not recover from the effects of the operation. In five cases the cysts were complicated with solid matter. In one, the ovaries converted into cysts had

solid growths springing from their interior; the cysts communicated by a sinus to the rectum and bladder; this in a girl sixteen years old. The left ovary was affected by a compound cyst, with a large proportion of solid matter, in one case, while the right was affected with a simple serous cyst. In another case the left ovary contained a large clear cyst; the right was converted into one with thick cartilaginous walls, containing calcareous matter. In one case the right ovary presented an enormous mass, partly solid, partly cystic. In one the ovary was converted into a large cyst with growths within, one of the latter being filled with pus.

Scrofula of the ovaries was found in four instances. In one both ovaries were greatly enlarged and filled with scrofulous matter and pus; there was also scrofulous disease of the peritoneum. In the second case both ovaries were filled with scrofulous matter; there was also phthisis. In the third the right ovary was a large thick cyst, containing scrofulous matter; the left, smaller, was similarly affected, and there was also tubercular deposit in the lungs. In the fourth case scrofulous matter was deposited in both ovaries, and there were other and general scrofulous deposits. The youngest person affected with scrofulous deposit in the ovaries was eighteen; the oldest, twenty-three.

Congestion of the ovaries was seen in seventeen cases. Three of these occurred in cases of "fever;" one in a case of chorea in a girl fifteen years of age. In two cases, the veins were varicose, dilated, and congealed. In two cases extravasation of blood was observed. A clot of recently extravasated blood was found in the ovary of a woman aged fifty; and spots of extravasation speckled the surface of the ovaries in a woman of forty.

Adhesions of the ovaries were observed in thirteen cases: in two apparently from proximity of cancer; in one, from numerous vesicles in each. The youngest case in which adhesions were found (exclusively of those associated with cancer) was twenty-five; and in eighteen instances the respective ages were under forty. The influence of this condition of parts in the production of sterility, with many other conditions already mentioned, should indicate precaution in the use of instruments, advocated by some practitioners, to overcome the mechanical obstructions which interfere with impregnation.

Displacement of the ovary was observed in one case; it was adherent to a hernial sac; it was observed in the sac during life, at the time of the operation for the hernia.

Atrophy of the ovaries was observed in ten cases. In one case, twenty-eight years of age, very little trace of the ovaries was found, in connection with a pelvic abscess. In one case, they were absorbed by the presence of a tumour. In one case of forty-nine years old, and in another of eighty, they were observed atrophied.

In concluding this statement of the pathological conditions of the uterine organs, the author expresses the hope that the cases have not been collected together for no useful pathological or practical end. Independent of all theory, and irrespective of any speculations, relative to the functions of these organs, to the causes of the maladies, or to the plentiful remedies proposed or adopted in these maladies, when they are supposed to exist, these cases have been examined, recorded, collected, and are now given to the public. This method of collecting, recording, and comparing cases can only ultimately and correctly decide the questions which have too often, and more frequently of late, led to unnecessary and injurious practices. If we only refer back to these cases, and take one broad view of all the disorders found affecting the uterine system, we cannot but conclude with this firm conviction, that in almost all cases constitutional affections may be detected, not only propagating, but maintaining, local diseases and local derangements; and that our remedies, if their use is to be attended with success, or their administration founded upon pathological investigation, must be directed to the general system—cautiously, if not sparingly, and in most cases not at all, directed to the part itself.

Dr. Murphy would gladly have avoided to take part in the present discussion, were it not that this question so seriously affects personal character; were it not that private moral character, as well as professional reputation, may be most easily whispered down if the charge that is implied in this report obtain credence. * * * * * * * *

The proposition attempted to be proved is this, that ulcerations of the neck of the womb, inflammations, indurations, hypertrophy—diseases which are said to require the use of the speculum—are very rare diseases; that they are caused by some constitutional affections; and that treatment must be directed exclusively to the general system, and cautiously, if not sparingly, and in most cases not at all, to the part itself. The proof advanced is from certain *post-mortem* examinations which have been made in St. George's Hospital, not given in connection with any history of the case, nor of the symptoms during life, nor of the appearances which the parts may have then presented; but just taken as they are from the dead-room, and intended by their number (583) to be a statistical proof that these diseases scarcely exist. The conclusion is obvious, that those who say they are frequent, are either telling untruths, or are ignorant of their profession. Against such evidence he protested *in limine*. He utterly disclaimed as unworthy of confidence, *post-mortem* examinations, taken separately from the disease observed during life. This objection, strong in ordinary medical cases, has a double force in such as are now under consideration—cases in which we may actually see the morbid changes during life. * * *

But he would take the report on its own merits, and distinctly stated that he had no confidence in it whatever. It professes to give a return of all the *post-mortem* examinations (583) made in St. George's Hospital, from 1841 to 1850, a period of nine years, by Mr. G. Pollock, curator. How does this agree with Dr. Lee's statement, in his paper on the Speculum? (*Med. Trans.*, vol. xxxiii. p. 274.) Mr Prescott Hewett was curator for six years, and in that time examined 600 cases. Mr. G. Pollock, who succeeded, was curator for three years, and examined 300. The periods of both gentlemen, collectively, are nine years; and in that time they examined 900 cases. But it appears that Mr. Pollock, in that time, only examined 583, making a difference of 318 in the female mortality of St. George's Hospital. Again, we find that Mr. P. Hewett could find no ulcerations; Mr. Pollock only four—three scrofulous, the fourth cancerous; but in the present report, Mr. Pollock has found out fourteen distinct ulcerations, neither scrofulous nor cancerous, because these cases are under a separate division. Now let us examine these fourteen cases of ulceration; they are included under the following title: "Mucous membrane of uterus, cervix, os, and vagina, diseased and altered in structure," 23 cases; 14 admitted ulcerations; 9 not admitted.

Of these,	Mucous membrane pulpy	1
"	Vascular about the os uteri	3
"	Mucous membrane congested . . .	1
"	Mucous membrane covered with pus . .	1
"	White secretion over mucous membrane .	1
		7

Thus of these nine cases, seven gave evidence of pre-existing local inflammation, which we assert to require local treatment. Again, there are twenty-one cases of congestion of the uterus, which, it is said, "apparently depended upon, and coexisted with, some general constitutional disturbance; the condition itself was not attended with alterations of structure, or indications of incipient disease," that is, the congestion was caused by the accompanying disease. Now, which is the more probable—that peritonitis, chorea, rheumatism, pleurisy, disease of the brain, conspired to produce congestion in the uterus, or that the congestion was the last trace of the incipient disease, inflammation, which was arrested by these attacks, and perhaps produced some of them? He claimed, therefore, these twenty-one cases as being at least ambiguous. There are sixteen cases of enlargement of the uterus, of which there is only one where the cause of the enlargement is explained; the uterus being drawn up by a tumour. There are fifteen unexplained, in one of which "the cervix was thickened and elongated." "Under the head of alterations of structure," "as of doubtful character," "with some suspicions of cancer," "and dependent on external mischief," there are twelve cases, of which five are cases of induration. The microscope could easily remove the suspicions of cancer. He therefore claimed them also as indurations, the result of inflammation, more especially as one of

them is thus described: "Body enlarged, neck elongated, and structure indurated, the neck and lips extensively ulcerated." Thus we have—

Acknowledged ulcers	14
Doubtful alterations of structure in the mucous membrane	7
Congestions unexplained	21
Enlargements of uterus, not explained	15
Indurations (not cancer)	5
Total cases, results of inflammation	62

All these cases, so far as we know to the contrary, may have required local treatment; and so far from agreeing with the author that these cases prove that "constitutional affections propagate and maintain local diseases," the evidence excites the suspicion that the neglect of the local disease may have caused some of the constitutional affections; and hence, although fully admitting the importance of constitutional treatment, he denied that that treatment must be directed exclusively to the general system, and cautiously, if not sparingly, and in most cases not at all, to the part itself. There is one other error in this report that a few words will dispose of: the proportion is taken for the whole number of 583 cases. Now, of these, there were only 265 morbid uteri; 318 were healthy. Dr. Lee, or Mr. Pollock, might just as well give a report of uterine ulcers from the Marylebone workhouse, and if they found three or four cases in the course of the year, say that they only met with four cases of ulceration in several thousand women, including, of course, those who had no other disease than inanition. He thus endeavoured to point out the errors of this report, because there is no kind of proof which can be more abused than statistics. "Statistics may be made to prove anything," and nowhere is this skill more shown than in medical questions. Few will take the trouble to examine figures, and conclusions are received as true because they have all the appearance of algebraic accuracy. Thus this question, ovariotomy, the Cæsarian section, and others, have been completely mystified by partial and imperfect statistics. He had stated why he would not take the statistics of St. George's Hospital; but if such an evidence is required, let it be from all the hospitals—from Guy's, from Bartholomew's, St. Thomas's, London. Let it be above suspicion. He was anxious to adopt this method in University College Hospital, but soon found out its fallacy. The very day after Dr. Lee read his paper on the Speculum in this Society, May, 1850, a girl was brought into University College Hospital, who had poisoned herself with opium. A *post-mortem* examination was made, and he sought for the uterus; it presented an ulcer on both lips of the uterus, extending into the cavity; the pupils present saw it; it was sent to the curator to be preserved. Although every attention was given to it, the next day it lost all its characters; it was thrown aside, and another means of proving the existence of ulceration adopted. Being able so completely to conceal the patient that nothing but the disease could be seen, he obtained the assistance of an excellent artist, Mr. Tuson, to make coloured drawings of these complaints. Mr. Tuson, however, soon found that coloured drawings could not faithfully represent them, and without his (Dr. Murphy's) knowledge made a beautiful series of models in wax, which will speak for themselves. They will show every variety of these diseases, which, in place of being in the ratio of 14 to 583, are more nearly as 1 to 3. In conclusion, he begged to apologize for so long occupying the Society's attention. * * * * He wished to remove from the minds of society mere prejudices that were excited against a most valuable means of diagnosis and treatment. But while he did so, he begged of the Society not to mix up in their minds two very different questions—the use and the abuse of the speculum. Highly as he valued it, he equally felt the deepest indignation against the man who will dare to abuse the trust reposed in him, who will violate the honour of his profession, and disgrace his character as a man. If such a being exist, he trusted that he would be exposed. He trusted that no false delicacy, no feelings of prudence, will prevent the profession expelling them from amongst us. Let this be done, but let not the whispers that such are to be found be made the means of flinging

calumnies on those who are honestly following their profession to the best of their ability. (Cheers.)

Dr. Lee spoke to the following effect: I consider Mr. Pollock's paper a most valuable contribution to the pathology of the uterine system. The numerous facts contained in the memoir, demonstrate that morbid alterations of structure in the uterine organs are very frequently met with in those who have died of diseases unconnected with these organs. These facts prove that in many cases organic diseases of the uterine organs exist when not suspected or ascertained during life; and the facts contained in Mr. Pollock's paper demonstrate further that many organic uterine diseases have a constitutional origin, or are found associated with diseases of other viscera and organs, as the heart, kidneys, liver, lungs and mammæ, which could not be relieved by any local applications to the uterus. These are the grounds on which my opinion rests, that Mr. Pollock's paper is a most valuable contribution to the pathology of the uterine system. In the 583 *post-mortem* examinations reported by Mr. Pollock, there were forty fibrous tumours of the uterus. By examining the bodies of a great number of individuals who had not died of uterine diseases, the history of fibrous tumours of the uterus was brought to its present almost perfect state. It was by this means that the situation of these tumours in the walls of the uterus, their structure, how they become polypi, and how they differ from other non-malignant tumours termed polypi, were all ascertained, and have been so fully described. By no other method could this ever have been accomplished. In the 583 *post-mortem* examinations reported by Mr. Pollock, there were thirty-eight cases of cancer of the uterus. In twelve of these there was cancer of some other organ. By examining the bodies of great numbers of individuals who have died in public institutions, from diseases not uterine, the greatest light has been thrown upon cancer of the uterus. By this means, it has been ascertained that inflammation is not the cause of cancer, as many French writers still maintain, and those who copy, in this country, from French books. By this means, it has been determined that cancer may commence in any part of the lining membrane, muscular coat, or peritoneum; and that the glandular structure of the os and cervix are rarely, if ever, the primitive seats of the disease. By this mode of proceeding, it has likewise been proved, that fungoid cancer and cauliflower excrescences of the uterus, are the same disease; and that all attempts to arrest their fatal course, by dragging them down, and cutting them away, or destroying them by caustic, are wholly unavailing. By the same method of examination of numbers of dead bodies, it has been proved that phagedenic ulceration or corroding ulceration or corroding ulcer, is merely one of the various forms of cancer; and that true scirrhus and encephaloid diseases are often found in the upper parts of the uterus, and in the surrounding parts, where the os uteri has been removed by this species of malignant ulceration. Will any one in the Society venture to stand up and assert that the speculum and caustic have ever been, or ever can be, of any use in the diagnosis or treatment of these two great classes of organic diseases of the uterus—malignant, and non-malignant? In the 583 *post-mortem* examinations reported by Mr. Pollock, there were twenty-three cases, in which the mucous membrane of the uterus was in a diseased condition. In twelve of these, there was ulceration or abrasion; in two of these twelve, if I heard correctly, there was disease of the kidneys; in two, diseased liver; in one diseased heart; in one, pneumonia; in one, chronic peritonitis; in one, pelvic abscess; in one, rheumatic fever; and in one, common fever. Of these twelve cases of ulceration or abrasion, there is only one in which there was not present some constitutional disease, or serious affection of some remote organ of the body. There is only one solitary case which could be considered a case of simple ulceration of the os uteri. I have requested Mr. Pollock to furnish me with the details of this case, and it turns out, that along with the ulceration of the os uteri, there existed extensive disease of the body of the uterus. In the 583 cases, there was not in fact met with a single case of simple ulceration of the os uteri. What good effect, may I ask, could have resulted from rubbing the os uteri with caustic, in any of these cases? Would this have relieved the disease of the heart—the disease of the kidneys and of the liver—the pelvic abscess?—or would it have arrested the fatal course of the pneumonia—the

peritonitis—the rheumatic and the common fever? By these examinations at St. George's Hospital, and by 2000 uteri examined at the St. Marylèbone Infirmary, at my request, it has been demonstrated that simple ulceration of the os uteri is rarely, if ever, met with in the dead body. "Neither in the living nor in the dead body, have I ever seen ulceration of the os and cervix uteri, except of a specific character." I repeat this statement in the most deliberate manner; and I may add, that there is no statement contained in my paper on the speculum, in the *Medico-Chirurgical Transactions*, which I would wish to alter, nor a word to retract. That paper was presented to the Society in April, 1850, and ever since, to the examination of this subject I have devoted the closest attention. Upwards of forty cases have, during the last twenty-one months, come under my observation in private practice, in which the treatment with the speculum and caustic had been employed by other practitioners, during periods varying from two or three months to as many years. I have preserved written histories of all these cases—the date, name of the patient, age, condition of the uterus and general system; the duration of the treatment with the speculum and caustic, and the names of the practitioners by whom the treatment was recommended and conducted. I have reduced these forty cases to a tabular form, which it will give me great pleasure to place in the hands of the President and Secretaries of the Society, with the express understanding that none of the patients' names are to be made public. I hold this table in my hand, and in looking over it, and weighing the results, the impression left upon my mind is, that the speculum, instead of reflecting light on the diagnosis and treatment of uterine diseases has cast nothing but darkness. I examined all these patients both with and without the speculum, but in not one could I detect an ulceration of the os or cervix uteri, or vestige of ulceration, where potassa had not been employed and the parts disorganized. In some of these cases there were fibrous tumours, which were readily detected by the ordinary mode of uterine exploration. In a number there was leucorrhœa, which had existed for years in strumous habits; in others, sterility; in not a few there was hysteria; in some, organic diseases of the ovaries. An account of several of these cases is contained in my paper recently presented to the Society, in which I endeavoured to trace the most important morbid alterations in the ovaries to the elementary structure of the organs, and which was lately characterized here as utterly unworthy of the merest tyro—of a first year's student, who, I presume, had not commenced the study of morbid anatomy. One lady was upwards of two years under the care of the most renowned speculumizers, and derived no permanent relief from the treatment. A few months ago I was requested to see this lady, in consultation, and after the most careful examination, both with and without the speculum, could discover no trace of disease, ulceration, or cicatrix in the os uteri. I was satisfied that ulceration had never existed in the part, although this was the disease for which she had been so long treated, and by which her general health had been most deeply injured. On further investigation, I discovered that the discharge proceeded from a fistulous opening and cavity, of considerable extent, on the inner surface of one of the labia. An eminent hospital surgeon laid this cavity open—it has healed up in the most favourable manner, the leucorrhœa is gone, and the patient is now in the south of Europe, rapidly regaining her health. [Dr. Murphy here rose, and addressing the President, asked whether Dr. Lee should be permitted to use such observations without naming the parties concerned?] Sir, remarked Dr. Lee, I will not commit a breach of professional confidence by giving the names of any of my private patients. (Cheers.)

The President having decided that Dr. Lee was in perfect order in withholding the names, he proceeded to state the details of another case: This patient was twelve months under the speculum and caustic treatment—directed by one of the great advocates for the speculum. The engorgement and ulceration of the os and cervix uteri were then said to be removed, but the symptoms continued. After a time she consulted another practitioner of the same class, and the treatment with the speculum was continued, for several months, without any material benefit. Then it was said retroversion of the uterus existed, and that this was the cause of all the suffering. To relieve this condition, the horrible instrument with a long prong was introduced into the uterus, and the

patient, wearing this, was sent to a fashionable watering-place, 200 miles from London. When nearly destroyed by this impaling machine, it was taken out, and her health is now in a wretched condition. The existence of the constitutional causes of all her sufferings did not appear ever to have been even suspected. [Dr. Lee held up the instrument, and requested the Fellows to examine it.] Simple ulceration of the os uteri is not the only imaginary disease about which much has lately been written. Retroversion is another, and this instrument (holding it up) is the uterine sound or poker, invented for the purpose chiefly of distinguishing this disease from fibrous and ovarian tumours. You have lately been told here that I know nothing of this dangerous weapon; I know more about the evil consequences it has produced than some imagine. Since this assertion was made here, it has been employed, with some other newly-constructed instruments, with the most fatal results, in the case of a young lady. Death speedily took place from extensive peritonitis. Dr. Roe can furnish full details of all the circumstances of this affair. The Royal Society having decided that the uterus has no nerves, like all the other organs of the body, it is of course a mere insensible bag, like gutta-percha; of course it may be pokered, cut, and torn with perfect impunity. A bag of the newly-invented instruments for the treatment of uterine diseases has been sent to me by Savigny. The following is the list which accompanied them: Uterotome for dividing strictures; cervix-uteri forceps; scissors in case; uterine support; hysterotome, for dividing the os uteri when strictured; jointed uterine double vulsellum forceps; uterine sound; one air-tractor; a set of dilators in case. [Dr. Lee took these instruments out of the bag, one by one, and showed them to the Society. The set of dilators in case he handed up to the President.] Of all these instruments in the bag, the hysterotome, said Dr. Lee, is by far the most formidable weapon. Until very lately I was not aware of the existence of such a cutting instrument, and as many of the Fellows must be unacquainted with it, I beg leave to call their attention to it. Its point is so constructed as to prove that it is intended to be employed in ripping up the uterus where no stricture exists. This uterotome or hysterotome is now being sent out by dozens for the use of the young assistant-surgeons in India. It would be far better to send it to the Cape, to frighten the Caffres, which it would do far more effectually than the rifle guns now being dispatched to that colony.

Dr. Henry Bennet stated, that he thought it a duty to lay before the Society an important document bearing directly on the statistics contained in the paper of Mr. Pollock, as far as they related to mucous membrane disease in the uterus. The document in question was a letter addressed to Dr. Woolley, of Brompton, by Mr. H. D. Holl, the curator of the museum and pathologist at St. George's Hospital, during the year 1850, and contained a statement of the results of the *post-mortem* examinations made by him at that hospital, with reference to the condition of the mucous membrane of the cervix uteri. Mr. Holl appeared to Dr. Bennet to offer all the guarantees that could be desired for such investigations.

"My Dear Sir: The number of women that died in the hospital during the past year was considerably below the average; and owing to the alterations that were being made in the dead-house, several of these were removed without examination.

"The whole number of bodies in which the state of the uterus was examined, was forty-four; of these, thirty-four either presented no disease of the cervix uteri, or only slight congestion, with the exception of three, in which the congestion was considerable.

"Of the remaining ten cases, nine of them presented more or less extensive abrasion of the epithelium from around the os uteri, but no ulceration. The pelvic veins were generally full of blood; the cervix uteri large, swollen, and puffy, with more or less venous congestion of the mucous and sub-mucous tissue, but no induration or effusion of lymph into its texture. The glands of Naboth were enlarged, and the canal of the cervix blocked up with viscid mucus.

"The removal of the epithelium appeared to commence at the follicles which surround the cervix uteri.

"Seven of these cases were taken from women who had arrived at or passed

the middle period of life; two of them were from young women aged respectively fifteen and twenty-one; in the former the hymen was entire.

"The remaining case was from a young woman, aged twenty-seven; two small sloughy ulcers existed on the posterior lip of the cervix uteri, and the mucous membrane of the vagina was thickened and inflamed, and covered with purulent secretion."

It is impossible, remarked Dr. Bennet, to read the above letter and not to be struck by the startling fact, that an observer, prepared by previous knowledge to investigate this particular point, and specially directing his attention to it, absolutely found abrasion or ulceration, conditions which I have described as identical pathologically, of the mucous membrane of the cervix, in ten cases out of forty-four; whereas the other observers only found these lesions four times in above 500 *post-mortem* examinations, that is, not in one per cent. He was warranted in making this statement, as only fourteen cases of abrasion or ulceration were mentioned by Mr. Pollock; and as ten of them belonged to Mr. Holl, it only left four for the other observers. Notwithstanding, therefore, the universally recognized talent of the pathologists who made the examinations in question, he could not but draw the inference, that not being prepared by previous knowledge of the disease in the living, and not having their attention rivetted to the point, they often overlooked lesions that really existed. He also felt bound to lay before the Society a note which he had received from Mr. Hutchinson of Guildford-street, which bore on the value (as to mucous membrane lesions of the neck of the uterus) of the *post-mortem* examinations at the Marylebone Infirmary, from the year 1832–5: a period to which Dr. Robert Lee had referred that evening, as also in the paper read before the Society in the previous session. It would be seen that these researches cannot, in truth, be admitted to have the value, in this respect, which Dr. Lee atributes to them.

"My dear Sir: During the period of my residence at the St. Marylebone Infirmary (1832–5), the question of lesions of the mucous membrane of the cervix uteri was not engaging the attention of the profession, and I have no recollection that any particular inquiries were made into the pathological condition of the uterus, excepting when it was the seat of some special disease, as cancer, tumour, or metritis. I believe that my successor, Dr. Boyd, was engaged with Dr. Lee (after I left) in such researches."

Mr. Pollock, in reply, said that Mr. Holl and Mr. Gray had taken the report of the cases which had come under their observation during the time they were connected with the *post-mortem* examinations in the hospital; and these cases formed part of his paper, and were extracted from the records of those gentlemen. He (Mr. Pollock) had endeavoured, as far as possible, to make his statements accurate; but in such a large field of inquiry he would plead guilty to some inaccuracies; but he had produced evidence that the statements he had made were *bonâ fide*. In an inquiry extending over so long a period, and involving so extensive a number of cases, some few inaccuracies might be expected. The conclusions he had drawn from the facts which he had laid before the Society might differ from those at which Dr. Murphy and others had arrived, but they were his own independent conclusions, and they did not differ from the conclusions which he had formed from observations made during life. He then explained that some confusion might have arisen in respect to Dr. Lee's statement, which had been referred to, as to the number of cases which had been examined. The average of cases had been seventy, eighty, or ninety yearly, but for the first three or four years, when the uterus was found healthy it had not been mentioned, and these cases had been excluded from the report laid before the Society. With respect to the gross numbers stated by Dr. Lee to have been examined by himself (Mr. Pollock) and Mr. Hewett, it was possible that, as the latter gentleman held the office of curator for six years, some of the 600 cases which had come under his observation might have been also returned by himself (Mr. Pollock), for they had not compared notes on the subject, and he had assisted in many of the examinations. He trusted that Dr. Murphy would not suppose for a moment that he had alluded to him, when he spoke of the prevalence of "injurious practices" in relation to the treatment of uterine disease. But it was well known that there were some practitioners who did resort to these practices, and to these his remarks would

apply. He had earnestly endeavoured to lay a plain statement of facts before the Society, without prejudice and bias, and he could only repeat that the result of these cases had led him to the conclusion that, in uterine disease, generally, constitutional treatment was the most important. (Cheers.)—Abridged from *Lancet*, Feb. 7, 1852.

43. *Statistics of the Lying-in Institution at Mayence.* By Dr. F. Kilian.—These statistics embrace 42 years (1806—48), during which period 7739 women have been delivered at the Institution. Some of the particulars of their cases are but imperfectly recorded; but those which have been noted are interesting, as exhibiting the results of a very uniform system of practice followed by the successive directors of the establishment. This practice is founded upon the maxims inculcated by Böer, of leaving the cases as much as possible to nature, and avoiding all meddlesome interference.

The 7739 mothers produced 7833 children (91 twin births, and 1 triplet), 7369 being born alive, 464 stillborn, and 147 dying in a few days—that is 611 stillborn or dying (nearly 1 in 19). The presentations were as follows:—

Head	7559
Face	38
Arm	31
Breech	115
Feet	81
Knee	5
	7829

Of the 7559 children offering *cranial* presentations, 333 were born dead—several, however, having died prior to the commencement of labour, as attested by their putridity—leaving 236 (1 in 32), who died during labour, including premature births. In 92 of the 7559 cases, aid was required. Of the 115 *breech* presentations, there were 16 twin cases; and in 20 the child was premature. Assistance was required in 7 cases.—Of the 81 *foot* presentations, 19 were twin cases, and 23 premature children. In 2, aid was required for the delivery of the head.—Of the 38 *face* presentations, in 3 only were the forceps employed. All were born alive except 2, in whom traces of putrefaction were present.—Among the 31 cases of *arm* presentation, 5 were twins, and 2 premature births. All were turned; 12 being born alive, 12 stillborn, and 7 having died prior to labour.

Premature Births.—These amounted to 250 (1 in 31), the proportion varying much in different years. A far larger proportion occurs in the latter half of pregnancy than in private practice, exceeding those of the first half by 11 to 1; the greatest absolute numbers occurring in the seventh and eighth, the least in the fourth month. There were 13 twin births; 114 children being born alive, and 149 dead. There were 215 cranial, 20 breech, and 23 foot presentations; 5 being unrecorded.

Prolapsus of the Funis.—Of this, 32 instances are recorded, being, Dr. Kilian believes, far fewer than really occurred. Of the 32 children, 11 were born alive, 17 stillborn, and 4 putrid or non-viable. Interference was resorted to in 7 cases; in 4 of which (2 living, 2 stillborn) turning, and in 3 (all living) the forceps were employed. Of the 25 cases left to nature, 7 were born living, 4 were putrid or non-viable, and 14 were stillborn. In 4 of these cases the cord had remained too long pulseless to justify interference, while in 2 born *living*, it did not pulsate during labour, nor until some moments after its completion. Dr. Kilian considers that no general rule can be laid down for the treatment of these cases; but, without declaring so absolutely in favour of this view as Hoffman of Würzburgh does (Neue Zeitschr. für Geburts., 1847), he believes that the majority of cases should be left to nature; the possible ill-consequences of our interference, to the mother as well as to the child, inculcating the necessity of restraining it within the narrowest possible limits.

Operations.—The *forceps* were employed 79 times (1 in 99), 61 of the children being born living, and 18 dead. Dr. Kilian attributes the rare use made of this instrument (compared to what is usual in continental practice) to the *little in-*

termeddling which takes place in the early stage of labour, whether for the purpose of regularizing abnormal activity of pain by depletion and other means, or of exciting it, when defective, by ergot or stimulating drinks.—*Turning* is recorded as having been performed in 34 cases—a number the author believes to be below the real one. In three of these the mother died; in one instance, suddenly, while the hips were passing; *post-mortem* expulsive action completing the delivery. Of the 34 children, 15 were born living, and 19 dead.—*Perforation* was resorted to in 3 cases.

Maternal Mortality.—Of the 7739 women delivered, 41 (1 in 188) died; 11 of these deaths occurring in women who had undergone operations for delivery, and 30 among those whose cases were left to nature. In 22 cases there was something remarkable in the progress of the labour, or in the delivery of the placenta. In 14 cases death occurred from peritonitis, and in 17 the cause is not stated. In explanation of so small a mortality, the practice of non-interference so strictly observed, is to be borne in mind; as is the remarkable fact that, during the 42 years of the existence of the establishment, it has never been visited by an epidemic of *puerperal fever*. Among the circumstances which may be supposed to favour the exemption from this scourge, is the fact that no clinique for medical students exists, and there is, consequently, far less mental and physical disturbance of the women during labour than in establishments where there is a clinique. Deaths, too, are known by the patients to be rare; and when they do occur they are carefully concealed from the cognizance of the other inmates; and indeed all sources of mental disquietude are sought to be avoided. Attention to cleanliness and ventilation also prevails. It is not, however, meant to be asserted that by these and other precautions puerperal fever can always be prevented; and indeed the town of Mayence seems to share the immunity of the hospital, as the oldest practitioners cannot call to mind the prevalence of an epidemic of this disease, even when large portions of the continent had been ravaged by it. The same immunity prevailed with respect to the cholera of 1832 and 1849.—*Brit. and For. Med.-Chir. Rev.*, Jan. 1852, from *Neue Zeitschrift für Geburtskunde*, vol. xxx.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

44. *Of Alcoholic Intoxication and the Alterations it causes in the System, considered in a Hygienic and Medical Point of View.* By Doctor Roesch, of Urach. —We copy (says the journal quoted below) from *Henke's Zeitschrift*, the above article. Levy, in his *Treatise on Hygiene*, remarks, that we should counsel temperance and not absolute abstinence. Dr. Roesch is of a similar opinion, but he excepts brandy, as its moral and physical effects are so highly pernicious. "Whoever shall succeed in banishing brandy from use, will confer an advantage to humanity equal to the discoverer of vaccination."

The following are the changes which he has noticed in the bodies of brandy drinkers, and who died in consequence of accidents and suicides.

1. The *Brain* has exhibited no marked constant alterations, but its membranes are always more or less altered; the arachnoid principally. It is thickened and of a milky white appearance. Frequently, too, a colourless fluid in small quantity was interposed between the layers of the serous membrane, and the same was sometimes found in the ventricles. Partial adhesions often occurred, as between the dura mater, arachnoid, and pia mater, or between the two last. Again, the dura mater alone adhered to the brain. These changes have all been noticed, in cases in which, during life, no signs of inflammation of the brain with effusion were present, except so far as the decrease of mental activity might be deemed an indication.

2. The *Lungs* were frequently œdematous, a colourless or reddish-frothy serosity flowing out on incision, and escaping in large quantities, on pressure being used; the lungs retaining the impression of the fingers. Sometimes, there was interlobular emphysema, and there were frequent adhesions of more or less extent between the lungs, the ribs, and the diaphragm.

3. *The mucous membrane of the stomach*, particularly near the pylorus, showed

bright red, punctated spots. And these were also seen in the upper parts of the duodenum, jejunum, and ileon. The mucous membrane of the small intestine was much thinned, but the muscular and serous remained unchanged. The mucous glands of the small intestines were enlarged.

4. Thinness and paleness of the muscles were constantly noticed; the walls of the heart lax and thinned.

5. Fat was always abundant under the skin and between the muscles. The mesentery, heart, kidneys, and liver, were so impregnated with it, that their texture seemed to have undergone a partial adipose transformation.

6. The blood in the arteries was black and fluid. The spleen was usually softened, sometimes indeed to the consistence of a *bouillie*.

Acute poisoning by brandy.—Sudden death from this is a rare occurrence. Still authors give instances, in which, from over doses, symptoms of irritation and paralysis of the brain have preceded an early decease. Children are sometimes the victims of even small doses. The first stage, though short, or possibly wanting, is that of excitement; the second, that of congestion, compression, and paralysis, and these are almost always observed; convulsions are rarer and these are followed by death.

Dr. Roesch reports five fatal cases, one a boy of two years, and another, a girl of four years. On examining the body of the latter after death, the brain, the spinal marrow and their membranes, were seen gorged with blood. In two adults, besides the appearances mentioned above, as peculiar to chronic intoxication, the brain and its membranes and the pulmonary tissue were gorged with blood; and in one of them, there was œdema of the lungs. The brandy was found unaltered in the digestive canal. All the tissues of these fluids seemed, judging by the odour present, to be impregnated with it.

It is probable that the cause of death in those poisoned by large quantities of brandy, is owing to a congestion of blood impregnated with this liquor in the brain; the compression that ensues, induces paralysis of the brain and spinal marrow, while the blood in the respiratory and other central organs, thus diseased, stops respiration, and induces asphyxia.—*Gazette Médicale de Paris*, July 26, 1851. T. R. B.

45. *Ether.*—On Monday, Mr. Payne held an inquest on the body of Mr. A. T. Griffin, Houndsditch. Deceased, it appears, was in the habit of taking ether into his bedroom. From want of sleep on Saturday morning, after being at a music party, deceased had saturated a towel with ether, and taken it to bed to induce sleep, and having pulled the bedclothes over his head, the vapour of the ether had overpowered him and rendered him unable to throw off the bedclothes, and he had thus been suffocated in the atmosphere of ether which he had created. The jury returned a verdict of "accidental death."—*Atlas, London Newspaper*, November 22, 1851. T. R. B.

46. *An Account of Two Cases, in which an Ovule, or its Remains, was discovered after Death in the Fallopian Tube of the Unimpregnated Human Female, during the Period of Menstruation.*—By H. Letheby, M. B., Lecturer on Chemistry and Medical Jurisprudence. Read before the Royal Society, May 1, 1851.

At the commencement of the paper, the author refers to the opinions of Drs. Lee, Power, Paterson, Barry, Girdwood, and Wharton Jones, of this country, and also to those of MM. Valentin, Negrier, Pouchet, Gendrin, Raciborski and Bischoff on the continent, respecting the supposed nature of the physiological phenomena manifested during the period of menstruation; and he mentions the case of Bischoff, viz., "that the ova formed in the ovaries of the females of all mammiferous animals, including the human female, undergo a periodical maturation and exclusion, quite independently of the influence of the male seminal fluid. At the periods known as those of 'heat' and the 'rut' in quadrupeds, and 'menstruation' in the human female, the ova which have become mature, disengage themselves from the ovary and are extruded. If the union of the sexes take place at this period, the ovum is fecundated by the direct action of the semen on it, but if no union of the sexes occur, the ovum is nevertheless evolved from the ovary, and enters the Fallopian tube, where it perishes." He states, however, that the arguments which have been advanced in support of

this opinion, in respect of the human female, are entirely of an analogical character; and that although the ovaries of women who have died during the menstrual period have been frequently examined, and Graafian follicles found in a recently ruptured state, yet the discovery of the liberated ovule has not, as far as the author is aware, ever been detected. The importance of his case rests upon three grounds: 1. The circumstances under which the women had died. 2. The finding of recently ruptured Graafian follicles; and 3. The discovery of the ovule and its remains in the fluid matter of the Fallopian tubes.

In the first of the cases recorded, the woman died during a menstrual period. She had been an inmate of the London hospital for twenty-four days before her death, where she was closely watched by a nurse, in consequence of her having attempted self-destruction, by cutting her throat, twenty-nine days before her death.

An examination of the body showed that the pelvic viscera were much congested; that the uterus was much enlarged; that the vagina contained a serosanguineous fluid; and that the hymen was unruptured. The ovaries were covered with stellate fissures or cicatrices; and at one part of the left organ, there was a purple spot having a ragged hole in its centre. By means of an incision into the gland through this spot, it was found that the opening led into a small cavity which was surrounded at its lower part by a dense tissue, infiltrated with dark coagulated blood. After macerating in spirit for a short time, it was noticed that the clot consisted of four parts.

In other parts of the ovary, several false *corpora lutea*, in different stages of decline, were found. The Fallopian tubes were highly congested, and the cavities of the tubes were filled with a bloody mucous. The left one contained, at about one inch from its end, a small vesicular body, which was, in the author's opinion, an ovule, for it consisted of nucleated cells and oil globules. The fluid matters of the uterus and Fallopian tubes were made up of blood discs, cylindrical epithelium, granular corpuscles, and a few spindle-shaped b dies.

The second was that of a girl who had died at St. Luke's Hospital, where the supervision had been quite as strict as in the last case. In this case the anatomical features were precisely like the preceding. The right Fallopian tube contained a globular body, similar to that found in the left on the former occasion. The globular body, on being crushed between two pieces of glass, and examined under the microscope, was found to consist, externally, of a mass of nucleated cells, the remains of the *tunica granulosa*, and of a transparent ring, enclosing an opake granular mass and a highly pellucid spot. The author considered that this body was the liberated ovule, and the influence of chemical reagents served to support his opinion. An examination of the *corpora lutea*, in both cases, showed that they consisted of large granular corpuscles and oil globules.

The conclusions arrived at, were as follows:—

1. That ovules escape from the ovaries of women during the period of menstruation, and that their escape is a spontaneous act, taking place quite independently of sexual intercourse.

2. That immediately before, or else consentaneous with the escape of an ovule, the whole substance of the Graafian follicle becomes charged with effused blood, and that a sort of fatty degeneration of the effused matter soon after takes place.

3. That the mere presence of a yellow body containing a clot in the ovary, is not, by any means, a certain sign of recent impregnation.

4. That a sanguineous fluid is poured out over the whole mucous tract of the generative system, during the menstrual period.

5. That the result of the observations tend to confirm the opinions entertained by Wagner, Bischoff, Barry, and Wharton Jones, concerning the membranous nature of that portion of the ovule known as the *zona pellucida*.

6. That the oil globules of the yolk are either inclosed in a distinct membrane, or else, that a structureless, solid material pervades the entire substance of this vitelline body, and so binds the component elements of it together.

7. That the recognition of the germinal vesicle removes some doubts concerning the appearance and position in the germ-mass.—*London, Edinburgh, and Dublin Philos. Magazine, October* 1851.

The facts and opinions given in the above communication may be considered as in accordance with those of the most eminent physiologists of the present day. The result has been that the value of the presence of a *corpus luteum*, as a proof of pregnancy, has been materially deteriorated. Could we be sure that all medico-legal examiners were able anatomists—that they were familiar with the distinctions between the true and false (for there are such distinctions), as laid down by our best writers, Montgomery, for example, the proof might still be relied upon.

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47. *True and False Corpus Luteum.*—In connection with the above article, we may mention the initial article in the Oct. (1851) number of the *Monthly Journal of Medical Science.* It is entitled, *Why is a true corpus luteum formed* (normally) *only when pregnancy occurs?* By Alex. Harvey, M. D., Lecturer on Medicine in the University of Aberdeen.

Dr. Harvey is a firm believer in the statements of Dr. Montgomery, where he describes the characteristics between the true and the false corpus luteum. He also allows the occurrence of the passage of the ovum at every monthly period. That whether the ovum be impregnated or not, the *elements* of a true corpus luteum exist in the ruptured ovisac of every such ovum, viz., a depent of organized and still farther organizable matter. That the tendency is to decay, when not impregnated; and to growth and development, when in that state. The reasons assigned for these last are as follows.

When a mature ovum is impregnated, provision is made for its being retained in the uterus, and both the ovum and the uterus become the seat of peculiarly active vital processes—which are to extend over many months—an active, sustained, and prolonged *determination* of *blood* takes place towards the uterus and its appendages.

That, on the other hand, when the ovum is not impregnated, it becomes blighted, and is thrown off from the generative organs. It has no inherent power of growth. The excitement also is *transient*, continuing only for a few days in each month.

But may there not be diseases of the uterus and its appendages, which will keep up an active determination of blood to these parts, equally with pregnancy, and thus induce the formation of a true corpus luteum? Our author denies this, on the ground that the active diseases referred to involve an *early arrest* of the menstrual discharge and of the maturation of ova. T. R. B.

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48. *Duration of Pregnancy.*—Dr. Murphy, at a meeting of the Medical Society of London, introduced a notice of this subject, an abstract of which will be found at pp. 258—259 of the preceding number of this Journal.

In addition to this we add a brief notice of an earlier publication, entitled "*The Periodoscope, with its Application to Obstetric Calculation and the Periodicity of the Sex,*" by W. Tyler Smith, Obstetric Lecturer in the Hunterian School of Medicine. He asserts that the actual duration of pregnancy is computed to be ten lunar months, forty weeks, or two hundred and eighty days; and adds that it is extraordinary, that there should be such a general agreement on this, when we take into consideration the different data upon which different authorities found their calculations.

The reckoning by calendar months is not sufficiently precise. "A pregnancy beginning in February, would include nine calendar months, making two hundred and seventy-three days; while the nine calendar months of a pregnancy beginning in May, would contain two hundred and seventy-six days."

The menses return every twenty-eight days, reckoning from the first day of one appearance to the first day of the next, and they continue at each period for a time varying from three to seven days. The sensation called quickening, *is a quickening of the uterus rather than of the fœtus. The uterus itself begins to move physiologically.* He, therefore, denies that the sensation is owing either to the movements of the fœtus or the ascent of the uterus. The most frequent time of its occurrence is at the "end of the fourth catamenial period, or sixteen weeks from the time of conception. Again, conception most frequently takes place a few days after the termination of the menstrual period.

"The ovaria and the ovarian nerves excite the uterus in the *reflex* manner at

the conclusion of the tenth ovarian period of pregnancy. Ten lunar periods make the term of pregnancy, but the ten ovarian periods actually begin and end within the parturient cycle.'' T. R. B.

49. *Diseases affecting Manufacturers of Chromate of Potash.*—By MM. Becourt and Chevallier. The following results are deduced from a memoir presented by them to the Academy of Sciences. 1. That their workmen are subject to peculiar affections. 2. That they particularly affect such as do not use tobacco, and in them the mucous membrane of the nose is destroyed. 3. That those who use tobacco are not liable to this affection. 4. That workmen, where skin is destroyed, suffer severely, while preparing the salt, and they should particularly guard against the contact of the solution of the bichromate. 5. That workmen tightly clothed are most exposed to its effects. 6. That animals, as well as men, are affected by the bichromate.—*The authors intend to pursue these researches.—Comptes Rendus, Oct.* 6, 1851. T. R. B.

50. *Viability, or Capacity of Living in an Infant.*—Although there are several cases on record similar to the one we are about relating, still, as it has peculiar circumstances about it, and is further vouched for on such high authority as that of Prof. Velpeau, we readily translate the account from the *Gazette des Hôpitaux*, of the 28th of June, 1851.

The case happened in the practice of Dr. Ducos. Madame Ducnorr, aged 35 years, had been pregnant for the last time at the age of 25. On the night of the 15th of June, 1850, after connection with her husband, she was surprised on rising, to find that menstruation was present, and still more on the next evening, to observe that the discharge had totally stopped. There was indeed no return of it. Before long, the early symptoms of pregnancy showed themselves, and at the next monthly period, there was no return of the menses.

Mad. D. continued in excellent health to the 9th October. On that day, she was obliged to carry her children to a boarding-school at Orleans, and experienced violent shakings, owing to a bad carriage and a still worse road.

On the night succeeding, she was conscious of a considerable discharge of watery fluid. Dr. Ducos advised perfect rest; and in this she persisted for ten days, but was daily conscious of a watery discharge, though unaccompanied with pain. She got up after that time, still having the discharge on her from day to day, although in small quantities. Dr. Ducos apprehended an abortion, but nothing material occurred until the 26th of Dec. On the evening of that day, she felt slight uterine pain, and the result was a delivery on the evening of the 27th. The child was the smallest and most feeble that can be imagined; the skin, of a high red colour, was scarcely consolidated; and Dr. D. advised merely to sponge it, without rubbing, which would certainly induce hemorrhage; there were no marks of hair; the nails resembled pearls at the end of the toes undeveloped, and the fingers were so small that the attendants resembled them to chemical *allumettes*.

Dr. Ducos was so certain of its not surviving, that he did not make such observations as otherwise he would readily have done. It was fed with milk and water, but for some time it could not take more than two teaspoonfuls of this at a time. It had so little power of calorification, that a person was employed night and day, near a fire, in order to keep it warm. At the end of ten days it began to take the breast, but it could only suck twice, without stopping. Finally, it gradually, and with slow progress, arrived at what would have been its natural term of birth, the 15th March, increased somewhat in weight, but not in bulk.

Six weeks after that time, and four months after birth, it showed still further strength, by occasionally uttering sighs. The remaining progress it is not necessary to note. It was thus proved that a child born six months and ten days is capable of surviving.

Dr. Ducos is of opinion that the constant use of heat (*incubation*) was the main cause of preserving and continuing the life of the infant. T. R. B.

51. *Nicotine.*—Experiments made at the amphitheatre of the Faculty of Medi-

cine of Brussels. By M. Ed. Vandencorput. The nicotine had been made about two years previous.

The least touch of this substance in the mouth caused a burning sensation like that of a very strong turnip. The smell was like that of an extinguished cigar. This odour, so feeble in the pure alkaloid, is developed by adding a few drops of ammonia. Four drops of pure nicotine, placed on the tongue of a full-sized dog, caused his death in less than a minute. After staggering, he fell on his left side. A strong solution of vinegar in water was immediately given, but without effect.

A drop and a half on the tongue of a pigeon killed it instantly; the pupils were greatly dilated. It fell on the right side.

Birds died more rapidly than other classes of animals. Frogs were the most refractory. A drop administered to one, did not cause death until after two minutes.—*Gazette des Hôpitaux*, July 1, 1851, from the *Presse Médicale Belge.*

Still later experiments by M. Oleminchs, of Brussels, on two sparrows, a cock, a hare, two dogs, and a cat. Results: 1. The animals poisoned fall indifferently on the left or the right side. 2. The poisoning is most active through the mucous ocular membrane (*la muguese oculaire*) than by the mucous digestive membrane (*la muguese digestive*). 3. The most remarkable and the most constant anatomical changes are, a congestion of the vessels of the pia mater, but most common of all, an intense congestion of the lungs.

The two first of these results agree *à priori* with physiological facts. The nervous system is in pairs, and perfectly symmetrical. Why then suppose that the action should be confined to one side? Again, the mucus oculaire coat is not protected by mucus, nor by an epithelium like the digestive, and hence absorbs much more rapidly.—*Gazette des Hôpitaux*, July 3, 1851, from the *Presse Médicale Belge.* T. R. B.

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52. *Lobeline.*—The latest and most complete examination of the *Lobelia Inflata* was published by Reinsch, in 1843. He confirmed the opinion of several others preceding, that a substance found by him, and which he styled *Lobeline*, was the active principle, but he did not obtain it in a pure state. M. Bastick announces that he has succeeded in this matter. We do not copy the process followed, but may state that it is similar to that advised by Liebig for obtaining hyoscyamine.

Indeed, it seems to resemble this last substance, except that it does not crystallize. It is a viscous, transparent oil, with a strong alkaline reaction, and possessing, when pure, the odour of the plant in a feeble degree; but when ammonia is added, the smell is strong and analogous to that of tobacco. If taken in small quantity, it acts like large doses of the plant. It is, therefore, without doubt, a violent poison.—*Gazette des Hôpitaux*, July 12, 1851, from the *Journal de Chime Médicale.* T. R. B.

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53. *Poisoning by Tincture of Aconite.*—On the 6th of October, 1851, an inquest was held by Mr. Carter, Coroner of East Surrey, on the body of F. R. Bolton, an excise officer, who died in consequence of tasting some tincture of aconite. A case of "medicated spirits" had been received at St. Katharine's wharf, with a permit from Scotland. The gauger took out a bottle for examination, and without removing the wrapper, poured some of the contents into a glass, "put a wooden penholder into the liquid, and then drew it across his lips." Mr. Bolton (the deceased) having tasted it, the bottle was handed to Mr. Brain, the principal officer, who immediately tore off the wrapper, and found it was labelled, in large letters, "Fleming's Tincture of Aconite—Poison." Bennet at the inquest stated that he had a burning sensation in his throat all that evening. Deceased did not complain at the time, but left the office soon afterwards. In the course of the evening, he was taken to R. T. Russel, surgeon, in a state of exhaustion, perfectly sensible, but cold and pulseless. He mentioned the circumstance of his tasting the tincture of aconite, and said he thought he had swallowed about a teaspoonful. The remedies applied were ineffectual and he soon expired. T. R. B.

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54. *Four Children at a Birth, and their Weight.*—In a curious English periodi-

cal, entitled "*Notes and Queries*," of the 27th of September, 1851, the following is quoted from an authentic source. "August 15, 1817. At Dr. R.'s house in Framingham (a small village four miles from Norwich), Mrs. R., who in 1804 had brought him twins, was safely delivered of four living children, three sons and a daughter, who were privately baptized. They were weighed with their shirts on, by Dr. Hamel, physician to the Grand Duke Nicholas of Russia, who paid Dr. R. a visit a few days after the birth, and were found to be 21lb 2 oz. One lived eighteen days: the other three, from eight to ten weeks. Dr. R. being a grandfather at the time, the children were born great uncles and a great aunt." They are buried in Framingham Earl churchyard, where there is a table monument over their remains, setting forth the above particulars in full.

The Dr. R. was Dr. Rigby, author of an Essay on Animal Heat, &c.

T. R. B.

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55. *Oil and Seeds of Croton Tiglium.* By M. Dublanc.—The author, from a series of experiments, makes the following inferences. 1. That Croton Oil does not contain a volatile acid. 2. That the acid sensible in this oil is retained by it, and cannot be separated either by a heat of 100 degrees (Reaumer, we presume) or by distillation. 3. That the volatile acrid principle which exists in the oil is not an acid, and cannot at present be separated. 4. That the active principles of the oil are capable of leaving one part of it, to be concentrated on another. 5. That croton oil is not homogeneous, but consists of an inert portion, of which alcohol dissolves about one tenth, and of another, more soluble, which involves (or includes) the active principles. 6. That the greatest degree of concentration of the active principles of croton oil, may be obtained by the action of a small quantity of alcohol on a large quantity of oil. 7. That either, used by the method of displacement, is preferable to the methods in use to obtain the oil. 8. That the pulp of the seeds applied to the skin, either by themselves or united with a fatty body, is a good substitute for the oil.—*Gazette des Hôpitaux*, November 6, 1851. T. R. B.

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56. *Jatropha Urens.*—The most deadly plant ever possessed at Kew, the jatropha urens, is no longer to be found there; it has either been killed off like a mad dog, or starved to death in isolation like a leper. Its possession nearly cost one valuable life, that of Mr. Smith, the present respected curator. Some five and twenty years ago, he was reaching over the jatropha, when its fine bristly stings touched his wrist. The first sensation was a numbness and swelling of the lips; the action of the poison was on the heart; circulation was stopped, and Mr. Smith soon fell, unconscious; the last thing he remembered, being cries of "Run for the doctor." Either the doctor was skilful, or the dose of poison injected not quite, though nearly enough; but afterwards the man in whose house it was got it shoved up in a corner, and would not come within arm's length of it. He watered the diabolical plant with a pot having an indefinitely long spout. If the vase itself contained a *quid pro quo*, he is not to be greatly blamed. Another not much less fearful species of *jatropha* has appeared at Kew and *disappeared.—Kew Gardens Quarterly Review*, December, 1851. T. R. B.

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57. *Darnel.*—The Museum (at Kew) not only communicates positive truths, but aids in the dissipation of vulgar errors. Thus it clears the poor darnel (*Lolium arvense*) from an unjust imputation. "Darnel," says the Museum, through Professor Henslow, "is generally reputed to be noxious, and is added to beer (or something else under that name), to increase its intoxicating properties." But De Candolle considers its ill report to be a popular fallacy, and says it is used by the French peasantry for bread in time of scarcity; grains of this calumniated grass are shown, looking not unlike grains of rye, whence its name of rye-grass. It is true, however, that darnel, like rye, is apt to be attacked by the ergot, and persons eating rye bread made from flour mixed with ergot, are sometime paralyzed. The ergot itself affords a useful but dangerous drug of uncertain efficacy. Some able practitioners have no faith in it *for good. Kew Gardens Quarterly Review*, December, 1851. T. R. B.

58. *On the Detection of Arsenic.* By Andrew Fyfe, M.D., Professor of Chemistry, University of Aberdeen.—Some metals unite with chlorine not only synthetically, but also by decomposition of their compounds and from volatile chlorides. Arsenic was one of these, and Dr. Clark, of Aberdeen, some years ago, was aware of this fact.

A paper contained in the *Comptes Rendus* induced Dr. Fyfe to take up the consideration of this subject. The fluid containing the arsenic (or supposed to contain it) is heated with oil of vitriol in a flask to which a bent tube is adapted, and by which the product of distillation is conveyed into a cool receiver. When the mixture is brought to the boiling point, a little dried sea salt is thrown in, the distillation is continued for some time. By this process, the hydrochloric acid evolved yields its hydrogen to the oxygen of the arsenious acid, while the liberated arsenic and chlorine unite and come over as chloride, which is condensed in the receiver.

$$(As\ O^3 + 3SO^3HO + 3ClNa = 3SO^3Na\ O + 3HO + As\ Cl^3.)$$

We thus obtain a transparent colourless liquid, in which arsenic is easily detected by the transmission of sulphuretted hydrogen which gives the yellow sulphuret. By the addition of nitrate of silver in excess to the product of distillation, a copious white deposit of chloride of silver is formed. On filtering this fluid, and then adding ammonia solution *continuously*, or which Dr. Fyfe prefers, by holding over it a rod dipped in the ammoniacal solution, so as to avoid excess, the yellow arsenite of silver is either precipitated or appears on the surface as a yellow film, according to its quantity.

On continuing the investigation it was found that this method would answer, with mixed fluids, and especially those containing organic matters. Thus mixtures, containing starch, barley broth, hare soup, and flesh itself, when boiled with the arsenious fluid, were tested and the presence of arsenic fully proved.

"The only metal likely to cause a source of fallacy in this method is antimony, which, with chlorine, forms a volatile chloride. But the antimonial compound which may be supposed to exist in a suspected fluid, I mean tartar emetic, does not yield a volatile compound when treated with oil of vitriol and sea salt, or if it does, does so with great difficulty. Allowing that it does afford a volatile chloride, as the product of distillation is in general colourless; there is usually no difficulty in distinguishing the sulphuret of arsenic from that of antimony. If we cannot distinguish them, or supposing both metals to be present, the addition of nitrate of silver in excess, filtration, and consequent application of ammonia to the filtered liquor will show the presence or absence of arsenic.

"I consider the method which I have now described as a valuable addition to toxicological researches. It is very easily performed; it separates the arsenic from substances which interfere and render, in other methods, the results fallacious; indeed, in some cases, prevent the arsenic, though in considerable quantity, from being detected, such as the presence of organic matter; which, as in Marsh's process, occasionally causes annoyance by the frothing up of the materials and consequent rise of the mixture into the tube.

The method which I now follow in conducting the process is to pour the suspected fluid into a flask with a wide mouth, to which is adapted a cork having two apertures in it. To one of them is fitted a bent tube, one end of which terminates in the flask immediately below the cork; the other end terminates in a tube containing distilled water, and placed in a cold fluid. Into the other aperture is placed a cork. Oil of vitriol is now poured in, and the mixture is boiled for some time, after which dried sea salt is thrown in rapidly and the cork is quickly replaced. The distillation is then continued for some time, taking care to keep the fluid, in which the tube is placed, as cool as possible. Instead of one I sometimes employ two or even three tubes, with distilled water, in each of which the product of distillation is condensed; and all of which, if necessary, are tested for arsenic. When any of the tissues is to be examined, it is introduced into the flask, with oil of vitriol, and boiled for some time, or till it entirely disappears. Sea salt is then thrown in, and the process is conducted as described.

As the transmission of sulphuretted hydrogen through the product of distillation, in general gives satisfactory evidence of the presence or absence of

arsenic, it is scarcely necessary to have recourse to any other test. It may, however, be more satisfactory to have recourse to others, and of these by far the best is nitrate of silver. It is to be added as long as it causes precipitation. The fluid is then to be shaken and filtered, by which the whole of the chlorine and hydrochloric acid is removed. After this, a rod dipped in the solution of ammonia is held over the filtered liquor. If arsenic is present, the yellow film appears.

In using sulphuretted hydrogen, the operator requires to be on his guard, because the presence of uncombined acid causes the decomposition of the gas, and consequent deposit of sulphur, which may by one not accustomed to observe precipitates be mistaken for yellow arsenic.

It may be objected to this method of detecting arsenic, that it will not succeed when the arsenical compound is in the state of sulphuret, with King's yellow, for example, which is sometimes taken as a poison. This must be admitted, when the sulphuret is *pure*. In one trial, in which sulphuret, prepared from an arsenical solution by precipitation, after being well washed, was treated with oil of vitriol and sea-salt, as described, the distilled fluid did not show indications of arsenic by the usual tests.

This, however, is not the case with the commercial sulphuret, which, in all the trials I have made with it, has afforded a fluid by distillation with oil of vitriol and sea-salt, in which arsenic was easily detected. This is owing to its containing arsenious acid. Accordingly when King's yellow was washed till it was pure, and then treated with oil of vitriol and sea-salt, it did not yield arsenic by distillation. In conducting this process, the King's yellow requires to be washed for a long time, before the whole of the arsenious acid is removed. In the trial above referred to, boiling water was used repeatedly for one day and cold water was allowed to flow on it in a constant stream for another day, before the water came off pure. The first washings were alkaline, and gave a yellow precipitate on the addition of muriatic acid, and also by the transmission of sulphuretted hydrogen, showing that it contained not only arsenious acid, but also sulphuret of arsenic, held in solution by an alkali.—*London, Edinburgh, and Dublin Philosophical Magazine*, December, 1851.

The above paper is doubtless a valuable contribution to the processes for the detection of arsenic and particularly of King's yellow, but it is disfigured, in the original, with numerous *hieroglyphics* incident to the new fashion in chemistry, which rests so much on symbols and formulas. On this matter, we beg to quote the following from a biographical memoir of William Prout, M. D., contained in the *Edinburgh Medical and Surg. Journal* of July 1851. We will only premise, that, possibly, through ignorance, we have been in the habit of considering him a very accomplished chemist, and one whose opinions are deserving of respect, if not of imitation.

"It is a singular, though not unintelligible feature in the character of Dr. Prout, that he never used the symbols and formulæ so generally adopted by chemical writers, as indicating the chemical composition of various organized substances, and the proportion in which these elements are represented to be combined. He had, in short, a distrust, amounting almost to total unbelief, in the accuracy of numbers assigned, and repeatedly expressed his opinion that these formulæ were in the present state of science unphilosophical, and did not represent the true constitution of organized substances." T. R. B.

ANÆSTHESIA.

59. *Cause and Prevention of Death from Chloroform.*—Dr. Snow read a paper on this subject, before the Medical Society of London, on the 21st of February last. He said that, by inhaling too much of this agent, the sensibility might be so much diminished that the necessity for breathing was no longer felt, and the action of the heart became afterwards arrested for want of respiration.

Under certain circumstances, also, chloroform stopped the motion of the heart by its direct influence. He had observed the manner of dying in numerous experiments on dogs, cats, and other animals, with the stethoscope applied to the chest, while the quantity of vapour of chloroform in the air they were breathing was known. When they were killed by breathing air containing from three to five per cent. of vapour, the inhalation lasted ten or fifteen minutes, and the breathing ceased about a minute before the action of the heart. In some instances, the animals made two or three gasping inspirations at the time when the action of the heart became inaudible; and, if the chloroform were withdrawn, these gasps had often the effect of restoring the animals. When the vapour was present to the extent of eight per. cent. or upwards in the air, the death of the animal was very sudden, and the breathing and action of the heart ceased together, except in a few instances, in which the respiration actually continued after the heart had ceased to beat. In all the accidents which had happened to the human subject, death had taken place by sudden syncope; and it was evident that the action of the heart had been paralyzed by the effect of the vapour of chloroform present to the extent of not less than eight or ten per cent. in the air breathed by the patient within a minute before the accident. Dr. Snow enumerated the deaths which had occurred from the administration of chloroform; they amounted to eighteen. In sixteen of these cases, the agent had been exhibited on a handkerchief, or towel, or piece of lint; and in the remaining two, in which some form of inhaler had been employed, it was not used by a medical man. The subjects of those cases were in a better state of general health than the average of persons who require to inhale chloroform. None of them were children or old people. Only one was reduced to a state of debility; and the operations that were being performed, or were about to commence, were, with two or three exceptions, of a trifling nature. Chloroform was so powerful, that it required special means to insure that its vapour should be well diluted with air; not for the purposes of respiration, but to prevent its acting with such rapidity that there should be no time to watch its effects, and to prevent its ever being present in the lungs in such quantity as to paralyze the heart, by overcharging a portion of the blood. There were two ways of insuring the proper mixture of air with the vapour: the first and best was to employ undiluted chloroform with a suitable inhaler; the second was, to dilute the chloroform with an equal quantity of rectified spirit of wine before pouring it on a handkerchief or sponge—for by this means the quantity of vapour which it would yield to the air would be diminished to within safe bounds. In cases of accidents from chloroform, he considered that the best means of preventing death was artificial respiration. From experiments which he had made on animals, he considered that, if it were performed within half a minute after the apparent death of the patient, it would in most cases be successful. He thought that the most safe and prompt method of performing it, in the human subject, would be to apply the mouth to the nostrils of the patient, and draw as much air as possible from the lungs, allowing them to be filled again by the elasticity of the ribs and atmospheric pressure. If this measure should not quickly succeed, he would recommend that the external jugular vein should be opened while the artificial respiration was still continued; for he had observed, in his experiments, that the right cavities of the heart became distended when its action failed, and that opening a vein near the heart improved the force and extent of any contractions which still continued. He had tried electricity on animals without much success.

Dr. Crisp said he had paid much attention to the subject under discussion, and some time since had formed a table of 20 recorded deaths from chloroform. In 20 recorded deaths from chloroform, 12 were males, 7 females, and 1 a child, sex not named. *Ages*—Under 20, 6; between 20 and 30, 4; 30 and 40, 5; 40 and 50, 2; 3 age not stated. *Nature of Operation, or Motive for the Administration of the Chloroform.*—Extraction of teeth, 4; removal of toe-nail, 3; amputation of thigh, 1; amputation of toe, 1; amputation of leg, 1, amputation of finger, 2; amputation of hand, 1; abscess of groin, 1; castration, 1; extirpation of the eye, 1; varicose tumour of the neck, 1; delirium tremens, 1; to procure sleep or pleasurable sensations, 2. Handkerchief, lint, or sponge, was used in

7 cases; the inhaler in 5; and in 8 the mode of administration is not known. *Death* was speedy, or momentary, in 11; from a few minutes to half an hour in 6; an hour and a half, 1; not known, 2. The great majority were healthy individuals, free from important structural disease; in no instance was there a sufficient amount of disorganization to account for death irrespective of the chloroform. The most usual morbid lesions in those examined were, fluid black blood in the right side of the heart, and congestion of the lungs. In 3 air was found in the veins. But the practical facts were: 1. That nearly all were young and healthy, and free from organic disease. 2. That in the majority of the cases two inhalations were employed, the first producing but little or no effect; the second being suddenly fatal; showing the cumulative property of chloroform, and the great source of danger in its administration. Dr. Snow, in his letter to the Lord Chief Justice of the Court of Queen's Bench, assumed that chloroform could not be used effectually for the purpose of robbery; he appeared to lose sight of the important fact, that persons who were robbed at night in the public thoroughfares were generally under the influence of alcohol; and, when in this condition, chloroform might easily be employed for the purpose of robbery.

Dr. Theophilus Thompson was anxious to extend the view taken, not merely as regarding the immediate danger to life in certain cases from the use of chloroform, but also so as to comprehend any change in the system from the peculiar effects of the drug at a longer or earlier period after its use. Many persons to whom this anæsthetic agent had been administered, have reported that they have not recovered their full powers of mind and body for weeks, and even for months afterwards. The conviction of his (Dr. T. Thompson's) mind was that in many instances some injurious action is caused by the inhalation, and that this imperatively demands investigation.

Mr. Bullock considered that the bad effects attributed to the influence of chloroform might, in many instances, be referred to the adulterations to which that drug is subject, and to the peculiar chemical properties of the spirit from which it is prepared. Chloroform is manufactured, not only from alcohol, but also from wood-spirit, and during its preparation from the latter article, a volatile oil is generated, which it is exceedingly difficult to separate from it, while its influence on the system is injurious. Sulphuric acid is also sometimes used in obtaining chloroform, which in that case may contain free chlorine, and prove inimical to health. When a perfectly pure chloroform has been used, he has seen patients kept under its influence for hours without any bad result.

Mr. Richardson said that there were fatal cases from the use of chloroform to which neither Dr. Snow nor Dr. Crisp had alluded, and with which consequently he believed they were unacquainted. One of these had occurred lately at Bruges. A soldier, wounded in the hip, was about to be subjected to some operation, and for that purpose chloroform was administered; the man died. The cause of death was acknowledged by the surgeon in attendance to be the bad mode in which he gave the drug, and not the peculiar action of the drug itself. He (Mr. Richardson) knew of two more cases in which the exhibition of chloroform had proved fatal; they had not been published, but he was aware of their having occurred. He could confirm many of Dr. Snow's observations. When animals had been killed by it, he had found that the red colour of the lungs was invariable, but those organs were not congested, neither was the brain; the liver was in a state of congestion, and the diaphragm was very contractile. Dr. Crisp and himself had experimented in some instances on animals with the drug, and had found that the right auricle of the heart, after the animal had been killed by it, contracted long after death. Death in man from the influence of chloroform was caused by syncope, but not so in the lower animals. He would wish to ask Dr. Snow whether he had found any difference in the action of sulphuric ether or of chloroform with respect to hard drinkers?

Mr. Barlow wished to offer a few observations, the results of his limited experience. He thought the danger of administering chloroform on a handkerchief had been much overrated; it might be done safely, if there be not too much on it, and it be not held too near the mouth, nor too many persons near,

providing always the case be well watched. He had never seen any danger where the iris did not dilate.

The President (Dr. MURPHY) said, with reference to the employment of chloroform in obstetric cases, if we examined the question dispassionately, we should soon have our objections to its use in midwifery removed. Some people used it with as little caution as they did vinegar; but chloroform was a strong poison—it had a definite action; and because, like other medicines, if carelessly given, it would kill, that was no argument against its use. He then referred to a table in the *British and Foreign Medico-Chirurgical Review*, of twenty-three cases of death from chloroform; it was remarkable in all these cases death had occurred in one or two minutes. In midwifery it was a most important agent. There was, however, no need of inducing unconsciousness; anæsthesia might always be produced, the patient remaining conscious all the time. The object is not to use it in all cases, but in those patients in whom from some morbid irritability the physiological labour-pains assume a pathological character, and then, without removing the entire pains, we may lull them in part with the greatest advantage. In regard to the impurities of chloroform, he (Dr. Murphy) had a very simple test. By rubbing a few drops on the palm of the hand, it left a fragrant odour: in no way pungent. Any pungent odour led him to suspect its purity.

Dr. CHOWNE was glad to see that a few years had wrought so healthy a change in the feelings of the Society about chloroform. All agreed now that it was a remedy to be used with great caution. In regard to midwifery, he had seen most disastrous consequences follow its administration, not only simple after consequences, but serious mental disorders.

Dr. SNOW said, in reply, that he had excluded from his list of fatal cases certain alleged deaths from chloroform, which, in his opinion, were clearly due to other causes. The child mentioned by Dr. Crisp, for instance, died at Berlin, during the excision of a very large nævus. The operation lasted eighteen minutes. Only nine drops of chloroform were used altogether, and none was administered during the last eight minutes of the operation. In reply to Dr. Theophilus Thompson, he said, that he had not met with any unpleasant consequences attributable to chloroform, except sickness, and in a very few cases hysteria, which latter might be caused by an operation without anæsthesia. If depression followed the long-continued use of chloroform, it should be removed by cordials and warmth to the surface.—*Medical Times and Gaz.*, March 6, 1852.

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60. *Death from Chloroform.* By Dr. FARWELL.—(Communicated in a letter to Dr. A. M. M'WHINNIE.)—"The unfortunate patient was the poor woman, Elizabeth Hollis, aged thirty-seven, whom you saw with me, suffering from cancer of the uterus, and who had been under my care eighteen months. The ulceration of the neck and body of the uterus had been making great progress latterly, and attended with alarming hemorrhage and copious fetid discharge. For these, proper remedies were administered, and the patient seemed to derive benefit both locally and generally. This improvement in her condition was, however, of short duration; her sufferings became more and more acute: there was constant escape of urine through an ulcerated opening into the bladder; and most intense pain attended the evacuation of the bowels, which required strong purgatives and enemata every alternate day; and it was necessary to administer narcotics in very large and increasing doses. The constipation of the bowels at last became very formidable; every remedy was tried in vain; and for three weeks there was no evacuation. She had become very emaciated, and her death was hourly expected. In this state, I examined the rectum, and was enabled to feel a hard mass of fecal matter, equalling in size a cricket-ball. This, as well as other indurated masses, I succeeded in extracting, but not without intense pain and further exhaustion. After this she rallied; but in about eight days her sufferings became as great as ever, and on examining the rectum I found that it was again filled and obstructed as before; but upon my telling her that she must endure the same operation, she said it was impossible, unless I gave her chloroform. I pointed out the danger, but

she still persisted. I accordingly acquiesced, and succeeded in relieving her of the hard fecal matter. This operation was again repeated in the same way after an interval of a few days; but it was evident that her debility was increasing, and when the time again arrived for affording her the same relief, I endeavored to prevail upon my patient not to have the chloroform: but I gave way to her earnest entreaties; I again used it—but fatally. The time occupied in its inhalation was about eight or nine minutes; quantity inhaled ten and a-half drachms, half a drachm at a time, allowing her frequently to breathe the atmospheric air. She spoke to me during this period. When I found that her arm fell after being raised, I proceeded to, and accomplished the operation. At this time she was not inhaling. I then, as I always do, wetted the face with a sponge, with the view of washing off any remaining chloroform from the nose and lips, when, to my surprise, I found that she had ceased to breathe, and all attempts to restore her were in vain. The friends would not permit a *post-mortem* examination. Sufficient disease, however, was manifest in the vagina and external parts to show that, had she not died under chloroform, she could not have lived many days longer. The fatal issue of the case does not lessen my confidence in chloroform. I still have the highest opinion of its value.

"The constipation appeared to be due to the diseased and enlarged uterus pressing upon the sigmoid flexure of the colon.

"When I commenced the operation, the pupil was contracted, and the conjunctiva slightly red. After death, the pupil was very dilated, and the countenance extremely pallid. The abdomen became much distended, and putrefaction seemed to commence early."—*Medical Times*, Dec. 13, 1851.

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61. *Effect of Chloroform on Muscular Fibre.*—W. F. Barlow, Esq., has performed a series of experiments, which seem to show that chloroform rapidly exhausts muscular irritability, and in common with other agents inducing the same effects, conduces to the rapid stiffening called rigor mortis. He observes: "It has been shown by Nysten, in his ingenious researches, that a long time intervenes, as a general rule, between dissolution and this peculiar rigidity, during which time the muscles remain irritable; and that the rigor does not approach until the muscular irritability is either completely or nearly extinguished. This is of course a main fact. All kinds of muscular action prove the irritability of muscles, except rigor mortis; this, on the contrary, is a form of contraction which prevails not until muscular irritability is lost. After *excessive voluntary* action, such as that of the hunted animal, which, though exhausted to the utmost, still runs for life, and forces to contraction, muscles become almost too languid to respond effectually to any stimulus, however violent, rigor mortis has been commonly noted to ensue with unusual rapidity. As Nysten says, 'c'est parceque l'action vitale du lièvre que le chasseur a forcé est, pour ainsi dire, epuisée par une fatigue excessive, que cet animal se roidit en mourant.' So, too, *extreme involuntary* muscular contraction has been known to lead to the swiftest possible death-rigor. And it is very probable that the exhaustion of muscular irritability after death by galvanism would be found to hasten the phenomenon."

The experiments were performed on frogs and birds, decapitated and skinned, and afterwards suspended in a bottle containing chloroform. In a medico-legal point of view they are important, as, if the same effects are produced on the human subject, a person poisoned with chloroform might, from the muscular rigidity, be thought to have been dead some time, when in reality the reverse is the case.—*Prov. Med. and Surg. Journ.*, Dec. 10, from *Medical Gazette*, Oct. 24, 1851.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

On the Treatment of Cancer by the Lactate of Iron taken by the Mouth and injected into the Veins. By DANIEL BRAINARD, M. D., Professor of Surgery in Rush Medical College, &c.

About two years since I communicated to Prof. Mussey, Chairman of the Committee on Surgery of the American Medical Association, some reasons which I had for supposing that the lactate of iron was possessed of more influence over cancer than any medicine yet known.

I have, since that time, had occasion to prescribe it often with results which, while they confirm the views expressed in regard to its efficiency in checking it, have not shown that it was capable of entirely curing it. This result was to me neither surprising nor discouraging, as I have already formed and expressed the opinion that to effect a cure "the whole of the solids and fluids of the body must be brought under its influence." That this is not effected by the simple introduction of medicines into the stomach is sufficiently obvious, and indeed to be expected, since the medicine, used in that way, is subjected to the action of the same nutrition and absorption under the influence of which the disease has originated. It is necessary to go behind this; and one of the means of doing so is by injecting it into the veins. It is only recently that I have had an opportunity of putting this method to the test of practice.

CASE. *Dec.* 13*th*, 1851.—Wm. H. Plumb, æt. 56 years, Englishman, applied to me on account of a tumour of the left orbit.

He gave the following history of his disease: About 25 years ago he had a disease of that eye, called by his physician cataract, which entirely destroyed the vision, but for which no operation was performed. About five years ago he received an injury of that eye from a stick striking against it, which was slight and gave but little pain. About seven months after this blow, he noticed a tumour, no larger than a pea, at the inner canthus "sending off roots into the eyeball." At this time, the tumour and eyeball were removed together by Prof. Smith, of Baltimore. The wound cicatrized well.

He remained in pretty good health about four years, when a tumour made its appearance at the lower and inner part of the orbit; which, in eight months, attained the size of a large hickory nut. It was then operated upon again, but at the end of six weeks recommenced to grow, and, at the time of this examination, was of the size of an orange, filling up the whole of the orbit and projecting in front of it. Its surface was nodulated, elastic, pulsating, ulcerated to a great extent, and from this point there oozed a bloody serous fluid. He was thin but not sallow, and his health was not very much impaired. He complained, however, of acute lancinating pains through the orbit and head.

16*th*. Extirpation was performed in presence of the hospital class. It was found so firmly attached to the lower part of the orbit that it was necessary to remove the periosteum with it, and at the back part it could not all be removed. There remained a muscular mass which bled profusely, and which was so soft as to break under the forceps or tenaculum. After several ineffectual attempts to apply a ligature the actual cautery was resorted to and suc-

ceeded. The wound was dressed with lint. No inflammation followed. There was a copious discharge of red serum for a day or two, which gradually became yellow, and afterwards changed to pus. He was put, from the day of the operation, on the use of lactate of iron gr. v, three times a day in solution.

31*st.* Injected into his veins fʒj of the following solution: Ferri lactis gr. viij; Aq. dist. ℥j. Carefully filter through paper.

Jan. 3, 1852.—Injected ʒij of same solution; 6*th*, fʒiij thrown in; 14*th*, ʒijss injected; 22*d*, ʒij; 26*th*, ʒij; 28*th*, ʒij.

Feb. 3*d.*—ʒij injected; 9*th*, ʒijss.

During the whole of this time the wound cicatrized rapidly. At first luxuriant granulations sprang from the surface, which were repressed by the application of nit. silver. Lanciuating pains continued for some time, but gradually diminished and at length subsided.

In six weeks from the operation the cicatrization was nearly complete. In eight weeks he returned home perfectly well.

The question whether the diseased mass was cancer I do not hesitate to decide in the affirmative. Its history and appearance sufficiently indicate this; its interior perfectly resembled the brain of an infant in a vascular state, and under the microscope it exhibited the most perfectly formed cancer cells. Dr. Johnson, resident physician, fully coincided in this point.

Whether it would have cicatrized without the use of the lactate of iron cannot be determined with the same degree of certainty. Taking into consideration the return, when last extirpated, with the fact that it was afterwards impossible to remove the whole of it, I think the probability of obtaining cicatrization by ordinary means was slight. I should not, however, have thought of performing, or attempting extirpation, but that the patient (who is intelligent and trusting) expressed his desire to be submitted to the treatment when it was explained to him.

I am aware that many surgeons, under the influence of preconceived opinions, may regard such treatment as hazardous. I had fully convinced myself that such was not the case. I have repeatedly thrown gr. x lactate of iron, imperfectly dissolved in an ounce of water, into the veins of a small dog without, in any case, peculiarly bad results.

It will be seen that gr. iij was the largest quantity thrown in at a single time. It was passed in gradually and cold, and, as soon as sensible effects were produced, it was stopped. The effect noticed was a flush of the face, a fullness of the veins of the head, and a tendency to sneeze, which all passed over in a few seconds. The circulation otherwise was unaffected. If the case had not progressed favourably, and it had seemed advisable to change the nutrition more profoundly, I would have had the solution warmed and put it in slowly until its effects were perceptible, then, allowing it to pass over, have repeated it as far as appeared safe.

Up to the time of his departure the injection had been performed nine times, and grs. xix in the aggregate injected. When the activity of the salt is considered, it will be conceded that such a quantity is capable of having an effect on the system by being thrown into the blood.

In addition to that he has during this period, eight weeks, taken ʒxix of the lactate by the mouth, to what extent this may have been absorbed and carried into the circulation, or what changes it may have undergone, it is impossible to determine.

In case of a cancerous disease seated upon an extremity I should, in addition to the two methods of administration resorted to in this instance, infiltrate the whole of the diseased and the healthy tissue about it with a weak solution

of the medicine. This can readily be effected by putting a ligature moderately tight about the member until it becomes œdematous, when by the aid of frictions the infiltration and maceration may be effected.—I had omitted to mention that all the injections were made into the veins at the elbow.

In submitting this case to the profession, I am far from claiming for it any merit which it does not possess, or drawing inferences which no single case could warrant. It is offered as an evidence of the practicability and safety of maceration through the medium of the blood systematically pursued with active substances, and to invite attention to other means of treating this inveterate disease than those which hitherto have been admitted by consent to be unsuccessful.

CHICAGO, *Feb.* 21, 1852.

On the Treatment of Erysipelas by Subcutaneous Infiltration of the Tissues. By DANIEL BRAINARD, M.D., Professor of Surgery in Rush Medical College, &c.

Diffuse inflammation, in whatever tissue it occurs, is, in many cases, the results of the introduction of a specific poison into the fluids of the living body. This is sufficiently obvious in instances of dissecting wounds, but more obscure in other cases in which the source of the poison is less palpable.

If we consider, however, the manner in which practitioners attending cases of erysipelas, communicate diffuse peritonitis, phlebitis, &c., to puerperal patients; that most cases of erysipelas of the face originate on the surface of the mucous membrane of the throat, or nostrils; that, in the members, it commences usually in the lymphatics or glands, and extends to the skin, veins, and areolar tissue; that the situation in which it most frequently occurs is on the scalp, back, surface of a divided bone, and the internal surface of the uterus, where, from the open vessels, absorption most readily takes place; that ulcers from frost bite, bite of animals, and unhealthy ulcers, are those most frequently attended by erysipelas; if, moreover, we compare its effects with that of the poison of serpents, we shall see that there are but few cases of true erysipelas where there is not a wound or ulcer on the surface of which the poison can be found, or where it is introduced from a foreign source.

What is the nature of this poison?

We are profoundly ignorant on this point, although, from analogy with the poison of serpents, &c., we might infer, with more or less probability of correctness, that it is an acid.

In what manner does it operate?

Its first effect is upon the lymphatic glands, its second upon the lymphatic trunks, next on the bloodvessels and areolar tissue near the point of inoculation.

The poison acts as a leaven, or by presence and catalysis, not in the first instance on the blood, but on that universally diffused fluid in the system which is extra-vascular, and in which the action of nutrition takes place. The blood only becomes secondarily changed.

How long does it take to act?

This depends upon its intensity, its quantity, the degree of predisposition, the point of inoculation, and other circumstances which are unknown. In ordinary cases, perhaps, four days might be considered the average time required from its introduction to the production of severe constitutional symptoms.

Is there any method of preventing its action?

It seems to me obvious that neither bleeding, purging, vomiting, sweating,

nor any known method of internal treatment can effect this cure. Neither can external applications fully do it.

Could not the medicine be put in the tissue where the morbid matter is operating?

To determine this point, I took a common exploring trocar, and, inserting it under the skin of a dog, injected different medicinal solutions. I found they produced suppuration. Using distilled water, the same effect was produced. It was owing then to the mechanical breaking of the tissue, not to the medicine. I then tried the common tube used for mercurial injections, which having a capillary point might allow it to infiltrate.

Here again I was disappointed; it would not infiltrate, or so slowly as to be of no avail.

Not discouraged by these difficulties, I determined to make use of it, first, on the human subject in cases where œdema or erysipelatous effusion had taken place.

Two cases treated in this manner were reported to the Chairman of the Committee on Surgery of the American Medical Association; which, as they will be noticed in their *Transactions*, need not be repeated here.

The manner in which the infiltration is effected is this:—

A small syringe is furnished with a point drawn down to a capillary tube, into which is fitted a steel point as fine as the finest needle. When this is inserted into the point, they form but one pointed needle, which may be passed like an acupuncture needle in any direction through the tissues, veins, or arterial trunks. The steel needle being withdrawn, and the syringe adapted to the point, the tissue is infiltrated by gradually injecting the desired medicinal fluid, using frictions to disseminate it.

Case.—Patrick Marmion, æt. about 23 years, had his hands severely frozen on the 23d of Dec. 1851. Some days after, the little finger of the left hand was amputated, an unhealthy wound remaining after it. He applied to me on the 15th of Jan., with the following symptoms:—

Left hand and forearm swollen to the utmost limit of the skin, arm much swollen, glands of axilla enlarged and tender. Surface of the hand and forearm, red vesications at different points, extreme pain, pitting on pressure. Considerable constitutional disturbance. Treatment. Inserted the point of an infiltrating syringe under the skin on the back of the hand, and slowly passed in a sol. of gr. x. iod. potassa in ʒiv dist. water. This was disseminated by frictions. A solution of iodine and hyd. potassa was also applied externally.

The first effect of the infiltration was a severe smarting pain, which subsided at the end of a few hours, and along with it much of the pain of the hand. At the end of twelve hours the pain was quite gone. The swelling subsided; on the 20th, there only remained a stiffness behind.

At this time I amputated the little finger of the right hand. This was followed by enlargement of the lymphatic glands of the axilla; red lines ran along the inside of the arm, redness, swelling and pain severe, as in the case of the other member. Thinking, perhaps, that the subsidence of the symptoms in the other case, after the use of the infiltration, might be merely accidental, I, in this case, used the external application of the sol. of iodine, and the usual internal means. On the 25th, an abscess had formed upon the front side of the wrist, which I opened. I then attempted to infiltrate the back of the right hand as I had before the other; but spilling, by accident, half the liquid, only gr. v. iodid. potass. in ʒij of water was thrown in.

27*th*. An abscess had formed on the under side of the wrist, which was

opened. The 29th, another abscess had formed in the ball of the thumb, which I opened. The case slowly convalesced; *but there was no suppuration in the situation of the infiltration.* It is not, indeed, certain that it would have occurred there without, but the case proves at least that the infiltration had no tendency to produce it.

The solution of the hyd. potash was preferred, because it is well known that it can be thrown into the tissues without producing suppuration, and for theoretical reasons on account of the alkali it contains. Thus far I had only operated on tissues already infiltrated.

In case of inoculation by snake bite or other poison, I should recommend, in case the poison had been already absorbed and could not be destroyed by cauterization, the application of a ligature so as very nearly to interrupt the venous circulation. This stops absorption at once, and when at the end of several hours the member becomes œdematous, then the infiltration can be effected. In snake bite the remedy proposed by Dr. Whitmire, a solution of iodine and hyd. potash, should, in the present state of our knowledge, be preferred.

I have ascertained by experiment that œdema of the limbs, sufficient to allow of infiltration, can be produced by ligatures moderately tight so as to give no pain.

I think it not improbable that medicines introduced into the system in this manner will, in some cases, act more efficiently than when taken into the stomach or injected into the veins. We know that many poisons act instantaneously when inoculated, and are harmless when swallowed.

When introduced into the veins, they are rapidly eliminated by the kidneys. Independently of this, I have reasons for believing that the effects of medicines, when taken into the stomach, when injected into the veins, when thrown into the different serous membranes, and when infiltrated into the areolar tissue, are not identical, but that the method of employing them has a controlling effect on their action.

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Head of a Child in a State of Putrefaction from Strangulation, the Funis being twice tightly bound round the Neck. By H. A. Bizzen, M. D., of Clinton, Miss.

A case occurred in my practice during the last year similar to one reported, by Mr. A. Owens, in the previous number of this Journal, p. 203.

The case was briefly as follows: On the 15th of November last, I was called to see Mrs. S——, æt. 18, in her first accouchement. She was in great pain, the pains recurring at intervals of ten or fifteen minutes. On examination I found the head fairly engaged in the superior strait, and expected that she would be delivered in a few hours at furthest. This condition of things remained for the space of twenty-four hours, at the end of which the membranes ruptured and the waters were discharged spontaneously. From this time the pains became excruciating, without any further advancement of the head.

She soon began to exhibit signs of delirium; and the family were much alarmed. In consequence of which I proposed to send for my instruments, and at the same time medical advisers. I called in Dr. W. G. Micks, and Dr. James A. Bizzen (my brother); but, before their arrival, I found it necessary to extract some blood from the arm and give the lady a warm bath; I also administered an anodyne draught; some or all of which relieved the pains and delirium entirely before the arrival of the other physicians.

In consultation with Dr. Micks, it was thought that the lady was sufficiently strong, and that delivery might be effected by the natural powers; so we simply resorted to some stimulating enemata, which seemed to have no effect, but were discharged immediately.

In about twelve hours from that time, pains came on a second time much as they were at first, only there seemed to be a very slow and almost imperceptible advancement of the head, which was expelled in about thirteen hours afterwards, making the whole duration of labour forty-nine hours or more.

On passing my finger to the cervix of the child, I found that the funis was wrapped twice around the neck and imbedded in the flesh, when I was able to account for a sudden gush of putrid and very offensive fluid from the mouth and nose of the child as soon as they had escaped the vulva. I made traction on each end of the chord and found both unyielding; I proposed to Dr. Micks to pass a ligature around the chord and to cut it in order to prevent further mischief, which he readily assented to. As soon as I put the scissors on the chord and began to cut, the remaining portion was lacerated, and the body of the child expelled with tremendous force.

Condition of the Child.—Head in a state of putrefaction, skin slipping when pressed in, and of a dark venous hue and offensive odour. Body sound and of a lively colour and appearance. Skin tough and moderately elastic. Placenta of normal size. Chord about normal length.

I believe that the strength of the chord and the firmness of the placental attachment were the sole cause of the tardy labour in this case, and that, as the uterine contraction pressed the head down, the tension of the chord and firmness of the attachment of the placenta retained the body in utero. And also that while the mechanical pressure around the neck strangulated that part, and caused the head to die, the body was still living and the circulation through the chord was but very slightly interfered with. The lady did quite well.

Clinton, *Jan. 14th*, 1852.

DOMESTIC SUMMARY.

Fractures of the Lower End of the Radius.—Dr. Henry Bond read before the Philadelphia College of Physicians, on the 2d of December last, a paper on this subject, which has been published in their *Transactions*. It contains some extremely valuable suggestions for the treatment of this accident, and we shall therefore give a full abstract of it.

Dr. Bond says that, according to his observations, there is no fracture, except that of the neck of the thigh bone, where there is so often a failure to accomplish a perfect cure, as that of the lower end of the radius. Practitioners may tell us that, although they have often *seen* deformed wrists, and rigid or anchylosed hands, *they* have had good success—have always cured; yet a critical examination of their cases would often show that there remained either more or less deformity of the radius or the wrist, a more or less complete loss of the use of the hand, or an extremely tedious recovery, much more tedious than occurs ordinarily in other fractures.

The usual mode of treating these fractures, as is well known, consists in the use of two long straight splints, with compresses or cushions, and bandages. The palmar splint extends from the elbow down to the extremities of the fingers. Some, however, do not allow this to extend below the second joints of the fingers. The dorsal splint extends sometimes only to the extremity of the meta-

carpe. When this dressing is applied, the longitudinal axis of the forearm will be continuous, or parallel, with that of the hand.

There are several objections to this mode of dressing the fracture, which I will attempt to point out. In the first place, it violates what ought to be regarded as a surgical canon in the treatment of fractures, viz., to adopt such a position as will put all the muscles, acting on the part, as much in repose, as free from tension, as possible; so that the least counteracting force will be required. 2d. The constrained position of the hand demands tighter bandaging, in order to prevent derangement of the fragments by paralyzing or subduing the muscles that are rendered tense by the position assumed. 3d. This constrained position and tight bandaging greatly increase the danger of that protracted or permanent rigidity of the hand and fingers which is a too frequent result of those injuries. 4th. This mode of dressing, by long straight splints, not only increases the danger that it will result in rigidity, but that, when it does occur, the hand will be left unsightly, inconvenient, or useless. 5th. There is another objection to it, which will be regarded by the surgeon as of more or less importance, according as he is actuated more or less by the feelings of humanity. I refer to the distress or discomfort which must result from a constrained position and the force applied to maintain it.

The muscles that act on the hand are least tense, or most in repose, when the hand is inclined backwards, so that the metacarpe forms a considerable angle with the forearm,* when it is also inclined inwards towards the ulnar side of the arm, and when the fingers are moderately flexed. In this case it will be perceived that the longitudinal axis of the forearm, if prolonged, would not correspond with that of the hand, but would pass through, or very near, the point, where the thumb and index finger most easily and naturally meet. Thus in the innumerable manipulations with the thumb and fingers (as with a pen, pencil, button, needle, money, &c. &c.), their points most easily and naturally meet in this axis of the forearm. This will be found to be the position of the hand, when it hangs by the side with all the muscles relaxed.

This consideration is of little comparative importance in the case of young persons, and of those who have followed no laborious handicraft; but to persons advanced in life, and to those whose muscles and joints have become rigid by hard labour, and to whom the hand is the means of subsistence, it is a point of very material importance. A large portion of these fractures occur among such patients. When such a hand is firmly swathed by a roller upon the long straight palmar splint, it is forced into a constrained position, and some of the muscles, acting on the fragments, are put into extreme tension. This condition of the muscles must act strongly on the fragments of the radius, and must tend strongly to derange them, especially when the fracture is oblique.

To counteract this tendency to displacement of the fragments on account of the tense condition of the muscles, the bandage with the compresses must be applied so tightly as greatly to increase the risk of that frequent ill success so well described by Dr. Barton.

When the hand is placed in the position above described, so as to take off tension from all the muscles, there will be so little tendency to displacement of the fragments, that a very gentle pressure of compresses and bandages will be adequate to maintain them in their proper relation to each other. The dressing may be removed earlier, so as to give motion to the hand and fingers, without danger of producing derangement of the fragments, and the gentle pressure of the dressing will be less likely to deprive the tendons and sheaths of their lubricity, and thus to cause permanent adhesions.

There are cases, as before observed, where such violence is done to the bones and soft parts, especially in elderly persons of a rheumatic or gouty diathesis, that it may be impossible to avoid permanent adhesions and rigidity. In such cases, if the usual authorized mode of treatment be adopted, the result will be a most awkward, unsightly, useless member.

But if the hand can be placed and retained in the unconstrained natural position above mentioned (to say nothing of the better chance of escaping perma-

* Malgaigne calls this *la flexion habituelle de la main en arrière.*

nent stiffness), *in the first place,* the unsightly deformity will be avoided; and in the *next place,* the hand will not entirely have lost its uses. For the hand, thumb, and fingers, being placed very nearly in the position of their most frequent uses, the interossei, the lumbricales, and the several short muscles of the thumb will, by causing only a very limited motion, enable the hand to perform very many of its useful functions.

I can say with confidence, not only from *à priori* reasoning, but from some experience within the last few years, that the dressing of a limb on the principles here inculcated, will very materially conduce to the comfort of a patient. I shall here make no comment upon what is said about paralyzing the muscles by tight bandages, nor upon the power of the body to accommodate itself, by a very painful discipline, to very distressing necessities.

The importance of the position of the hand in the treatment of fractures of the radius has been fully recognized for a long time by eminent surgeons. In these cases, Mr. Cline did not allow the splints or the sling to extend below the wrist. His object was to let the hand, by its own weight, and without any impediment, incline towards the ulnar edge of the forearm; and, while the ulna acted as a counter-extending force, this inclination of the hand would prevent the fragments from overriding or overlapping each other, and make it very easy to keep them in apposition. He understood well the mechanism of this accident. When the radius alone is broken, the ulna affords all requisite counter-extension; and in proportion as the hand is inclined towards the ulna, will the lower fragments be drawn down, so that there will be hardly a chance for one fragment to overlap the other; certainly there will be little difficulty in keeping the fragments in apposition with very gentle means. But Mr. Cline's method of dressing, in order to accomplish the indication, was too indeterminate; he could not depend upon maintaining steadily the same degree of inclination of the hand, and one might suppose that there would be danger of producing artificial joints. Nevertheless, I am persuaded that, with Mr. Cline's method of treatment with short splints, there would be fewer cases terminating in deformity and loss of the use of the hand, than when the arm and hand are tightly swathed in long straight splints.

Sir Charles Bell long ago inculcated the importance of the inclination of the hand in the treatment of fractures of the forearm, and he has given a plate illustrating his opinion. Boyer is very explicit upon this point. He says, "the extension should be made by inclining the hand towards the ulnar edge of the forearm." Yet this obvious principle and this explicit direction are wholly disregarded in the present usual mode of dressing with long straight splints and tight bandages. Dupuytren, whose lectures on this subject should be studied by every surgeon, devised a splint—his *attelle cubitale*—with the special object of maintaining this inclination of the hand towards the ulna. Notwithstanding this great man devoted such deep attention to this subject, there were serious defects in his apparatus, which have been pointed out by subsequent French writers.

I have attempted to devise a mode of dressing these fractures, having reference to the principles advanced in this paper, and that will meet the following indications:—

1. To maintain such an inclination of the hand upon the forearm as shall most effectually relieve the muscles from tension, or put them in repose.

2. To maintain the hand and fingers in a position that, if rigidity should result, the member shall be as little an incumbrance, and retain as many of its uses, as possible.

3. To make it easy of application, requiring no extraordinary skill or dexterity, and little liable to be deranged or displaced.

4. To make the dressing easy and comfortable to the patient, while it does not lack efficiency.

My own experience of its use, within the last three years, convinces me that I have to some extent accomplished these indications. How far this shall be corroborated by others can be known only when others shall have had time, opportunity, and disposition to test it.

To enable others to test the principles herein maintained, in the mode of

treating these fractures, I offer the following directions for preparing the dressing, with some explanations as to its application :—

Fig. 1.

Fig. 1. A board cut to correspond with the profile of the forearm and hand.

Fig. 2.

Fig. 2. *A*. This whole space down to the *palmar block* (*B*) to be covered with pasteboard. *C. C.* Parts of the block, which must be more or less cut away, to suit the prominences of the hand. *D. D.* The projecting and elevated edges of the pasteboard.

1. With a light board, of proper thickness for a splint, take a profile of the well forearm and hand of the patient, placing the hand in its habitual inclination towards the ulnar side of the arm, and extending the profile from the elbow downwards, so that it shall reach the second joint of the fingers on the inside, when these are moderately flexed—as much flexed as they are when the points of the thumb and fingers are brought into contact. The lower end of the board must be cut off obliquely (at an angle of fifteen or eighteen degrees) in a direction corresponding with that of a body grasped in the hand, when the hand is inclined to the ulna, as above indicated. [See fig. 1.]

2. Cover the board thus prepared with sheeting, or other strong fabric. This may be done by winding around it, from end to end, a narrow rolling bandage, covering all of it as nearly as may be with few or no duplications. This is the most expeditious method. A neater one is to cut a piece of sheeting, of the general form of the board, but extending beyond the board on every side, and fastening it upon the board either by a few stitches, drawing towards each other the overlapping edges, or gluing down those edges upon that side of the board which is to be towards the arm, and which edges are to be covered with the pasteboard.

3. Prepare a block of soft, light wood, from seven-eighths to eleven-eighths of an inch thick, and from two to two and a half inches wide, according to the size of the patient's hand, and of a length corresponding with the width of the board in the palm of the hand. This block is to be carved and rounded, so as to adapt it to the form of the hand, and make it easy for the thumb, and in the grasp of the hand when it is placed on the board. It is to be fastened there by screws or nails, so that the remote edge of it shall correspond exactly with the lower oblique end of the board.

4. Upon that part of the board not covered by the palm-block, fasten, by means of small carpet tacks, a piece of book-binder's pasteboard, extending on each side beyond the edges of the board about an inch. If the pasteboard be very thick and stiff, make a slight incision in it along the edge of the board, in order to bend more easily the two projecting portions of it, thereby making a kind of box for the lodgment of the arm. [See fig. 2.]

It seems to me that this splint, or one constructed on the same principles, will meet the above-mentioned indications in the following manner: *First.* The form given to the board retains the hand in its habitual inclination towards the ulnar edge of the arm, accomplishing the object aimed at by Dupuytren's *attelle cubitale*, with as much certainty, with more simplicity, and more comfort to the patient. *Second.* The palmar block retains the hand in its habitual inclination backwards, and it gives the fingers that moderate flexion which most relieves the muscles from tension, and likewise that position which, if stiffness should result, will not only save the hand from a most inconvenient, ungraceful deformity, but will reserve to it the power of performing very many of its most frequent and useful functions. In addition to these advantages, this block contributes much to the comfort of the patient. *Third.* The object in covering the board with a strong fabric, as above described, is to retain the bandage with certainty in its place, without applying it with a dangerous tightness; for, by fastening the roller to this covering with pins, the surgeon need never have his patience tried by finding his dressing deranged, at his next visit. I can speak with confidence on this point, from having used it repeatedly in cases where this quality was fully tested. *Fourth.* The pasteboard is not an essentially necessary part of the splint, but it will be found to contribute to the comfort of the patient and the convenience of the surgeon.

The requisites for dressing with this splint are flannel or other soft fabric, to cover or line the inside of the splint; two compresses; a roller; sometimes, but not always, a dorsal splint.

The flannel or other fabric with which the splint is lined should extend a little beyond the edges of the pasteboard, and the same piece may be extended over the palmar block; but it will be better to cover this block with a separate piece. For this purpose, take a piece of flannel large enough, when it is doubled, to cover the block. Through the doubled edge, with a proper needle, carry a small string (such as ligature-twine), and tie this around the splint immediately above the block. The covering of the block thus applied may be conveniently changed, without removing the arm from its bed.

Two compresses will generally be required: the anterior or palmar, and the posterior or dorsal. The proper construction and application of the former of these are a most important point in this dressing, and certainly not less so when long, straight splints are employed; and deformity of the radius or wrist will most frequently result from negligence or want of skill in its use. If the compress be deficient in thickness, and the bandage be applied with its usual tightness, there will not fail to be either a curvature forwards, or a sigmoid flexure, which are the usual deformities. If the thickness of this compress be excessive, there may be a curvature backwards, which I think seldom occurs; but there will be such undue pressure by such a compress as to increase the danger of adhesions, and to aggravate the discomfort of the patient.

I consider this point so important that I shall run the risk of being thought tediously minute.

It has seemed to me a notable defect in Dr. Barton's mode prescribed for dressing this fracture with straight splints, that he directs the two compresses to be of equal dimensions, and of about the same dimensions in every case. He says: "Two compresses, each about two inches square, and composed of strips of bandage about one yard and a half long, evenly folded up, are to be in readiness." Dr. Barton's very eminent skill would undoubtedly vary from this direction, as each case might require. But we object to this as a rule for those who follow rules implicitly.

If we apply a long, straight splint to the palmar side of several uninjured forearms, we shall find the space between the splint and that part of the forearm, to which the compress is usually applied, to vary very much, being two or three times as great in some cases as others. This space will depend upon the form of the bones of the forearm (which are sometimes considerably curved backwards), upon its muscularity or emaciation, and upon the greater or less prominence of the heel of the hand. This anterior compress must, therefore, vary in thickness, according to the varying form of the forearm and hand.

In order to determine with precision the requisite thickness of this compress

in any case, place a long, straight splint upon the palmar side of the uninjured forearm of the patient, and make a compress of such thickness as to fill the space, so that the splint applied shall bear as firmly upon the compress as the ends of it do upon the wrist and upper part of the forearm. It is to be observed that, when the hand has its usual inclination backwards, the space between the forearm and splint will be less, and of course require a compress of less thickness than when the hand and forearm are swathed upon a long, straight splint.

With the splint here presented to the College, it is wholly unnecessary to attach this compress to the forearm by means of a roller. And where there is not such a necessity, it is generally worse than useless to apply a roller directly to the arm before the splint is applied. Some eminent surgeon has said, that the only advantage is, that it impresses bystanders with an idea of the complexity and difficulty of the operation. If excoriation should be threatened, cover the part with soap plaster. Place this anterior compress on the splint, so that its lower edge shall approach very near to the lower end of the upper fragment of the radius, when the forearm is laid upon the compress in the splint.

These preparations being made, the fragments, if deranged, are to be reduced, and the splint applied. I have very seldom, if ever, found any difficulty in replacing the fragments. Let an assistant, grasping the hand (not the fingers), incline it towards the ulnar side of the arm, according to the direction of Boyer, making steady, but not very vigorous tension, and with his thumbs and fingers the surgeon will easily press the projecting fragments into their proper relation to each other. In making this extension, Dr. Dorsay directs the assistant to "grasp the hand." Dr. Barton says an assistant "makes extension from the fingers." It seems to me that Dr. Barton errs on this point. The objections are, first, that by grasping and pulling the fingers, the flexor muscles are brought into so much more tension, that they will offer more resistance to the extending force. In the next place, by pulling at the fingers the hand will be brought more nearly into a direct line with the forearm, instead of being inclined towards the ulna, the utility of which inclination in such cases is, I think, so obvious that it would be superfluous to cite authority or to attempt a demonstration.

After the forearm is laid into the splint, apply the dorsal compress. This compress is seldom essentially necessary in these cases; but it may always be advisable to use it. Its thickness is comparatively unimportant, especially when a dorsal splint is not employed. It may be made of folds of a bandage of about the width of the wrist, and so long as to cover the lower fragment of the radius and the wrist, but not extend upon the hand. After adjusting this compress, apply a roller, beginning upon the lower fragment of the radius, carrying it down over the wrist, the metacarpus, and the first joints of the fingers, leaving the thumb free; then returning with the bandage to the upper end of the splint, and attaching it in several places by pins to the woven covering of the splint. If the compresses have been properly made and adjusted, it is unnecessary, with this splint, to apply the bandage with anything like the tension ordinarily employed in dressings with the long straight splints; and those accustomed to the use of these splints will be liable to err on this point.

A dorsal splint is unnecessary, unless the fracture occur so high up that there is danger of diminishing the interosseous space between the bones of the forearm. In such a case, it is necessary. It should be so wide that the bandage will not pass upon the fragments in such a manner as to lessen the interosseous space; and it should be so long as to reach from near the elbow to the hand, but not extend upon the metacarpus.

It may sometimes be necessary to use longitudinal narrow compresses to prevent the contraction of the interosseous space. But where no roller is applied directly upon the arm, it is probable that these long narrow compresses will not commonly be found necessary.

Although the preceding observations have had an especial reference to fractures of the lower end of the radius, probably some of the principles advanced and the means proposed to carry them out, may be extended farther. How far

they may be applicable to other injuries or diseases of the forearm and hand, I leave to be determined by future observation.

We understand that Dr. Bond's splint has been recently used in the Pennsylvania Hospital in several cases, and with the most satisfactory results.

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Protrusion of the Eyeball, probably from an Encysted Tumour in the Orbit.—Dr. HAYS remarked that, if there was nothing of more importance to occupy the attention of the College, he would take the opportunity of relating the outlines of a somewhat curious case that had been interesting to him, and, he thought, might be so to the Fellows present.

He had been sent for, in April last, to see a lady from the State of New Jersey, about thirty-five years of age, of lymphatic constitution, who was labouring under a very considerable protrusion of the right eyeball, which was rolled inwards towards the internal canthus; the upper eyelid was greatly enlarged by a number of encysted tumours within it. The deformity resulting from this condition of the eye, as may readily be supposed, was very considerable—the sight of the eye was entirely gone.

Dr. Hays was unable to obtain any very satisfactory history of the case. The patient was an orphan, and from her brother, who was but a few years older than herself, all that could be learned was, that from his earliest recollections of his sister her right eye was somewhat protuberant. He thinks that he had heard her parents say, that up to her fourth year she had had no affection of her eye, but soon after this period the swelling had commenced, and had gradually increased, until it had attained its present magnitude. The physicians in her neighbourhood had been consulted in her case, and had tried a variety of remedies for her relief, but without success. She had, finally, been brought to Philadelphia for the purpose of consulting Dr. Hays.

Dr. H. could not discover anything in the case to lead him to suspect that the protrusion of the eye was caused by the formation of a malignant tumour behind it; he suspected that it was caused either by an encysted tumour behind the ball, or by an effusion within the capsule of Tenon. Still, he was not sufficiently positive as to the correctness of this diagnosis as to warrant him in the introduction of a bistoury with the view of causing the discharge of the effused fluid. He concluded, therefore, to first direct his attention to the removal of the cysts within the upper eyelid, in the hope that, in the course of his attendance, the correctness of his diagnosis would be confirmed or disproved.

One of the cysts was opened with the knife, and then solid sulphate of copper was applied to its inner surface. The others were treated in succession in the same way, and the tumefaction of the lid, in consequence, was considerably reduced. At this state of the case, Dr. Hays left for Charleston, to attend the session of the American Medical Association. Upon his return he was sent for, and then learned that, on the day he left the patient had accidentally tripped over, and, in falling, had struck with violence the right eye against the edge of a chair. The pain was intense, and the consequent swelling, from the contusion and ecchymosis, very considerable; upon the disappearance of this, it was found that the protrusion of the eyeball had greatly diminished. Dr. H. thought that very little doubt could exist as to the mode in which the violence inflicted upon the eye, in this case, had caused the removal of the protrusion previously existing. It was evidently by the rupture of the cyst or of the capsule of Tenon and the consequent escape of the fluid into the cellular tissue of the orbit where it had been afterwards absorbed. Had the protrusion been caused by a malignant tumour formed at the bottom of the orbit, the blow upon the eye, instead of being followed by a removal of the pre-existing deformity, would, on the contrary, have been more likely to be followed by an augmentation of the mischief, if not the rapid destruction, of the eye.

The protrusion of the eye has now nearly disappeared; the strabismus, however, still continues, and vision remains extinct.—*Transactions of the Philadelphia College of Physicians*, Oct. 7, 1851.

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Amputation of the entire Lower Jaw, with Disarticulation of both Condyles.—Dr. J. M. CARNOCHAN records, in the *New York Journ. of Med.* (January 1852),

a case of necrosis of the lower jaw, in which he amputated the entire bone. The subject of it was a farmer, forty-three years of age, and disease of the bone is supposed to have resulted from a cachectic condition, following an attack of typhus fever. The operation was performed on the 13th of July—it was not thought expedient to administer an anæsthetic.

"The patient being seated on a chair, and the assistants properly arranged, an incision was first made, commencing opposite the left condyle, passing downwards towards the angle of the jaw, ranging at about two lines in front of the posterior border of the ramus, and extending thence along the base of the jaw, to terminate by a slight curve on the mesial line, half an inch below the free margin of the lower lip. The bone was now partially laid bare, by dissecting upwards the tissues of the cheek, and by reflecting downwards, for a short distance, the lower edge of the incision. The tissues forming the floor of the mouth, and situated upon the inner surface of the body of the bone, were separated from their attachments from a point near the mesial line, as far back as the angle of the jaw. The attachments of the buccinator were next divided. The facial artery, the sub-mental and the sub-lingual, already cut, were then secured by ligature. It was now seen that the bone was partially separated at the symphysis, and that the necrosis was complete from that point to the inferior portion of the ramus. The ramus itself was found diseased; the periosteum externally was inflamed, and in some parts easily detached. The tongue was now grasped and held forwards, while the attachments of the genio-hyoglossi muscles were divided. A double ligature was passed through the anterior part of the root of the tongue, and intrusted to an assistant, in order to prevent its retraction upon the superior orifice of the larynx. A fatal case from the falling backwards of the tongue, occurred a few years ago, in the practice of an eminent surgeon of this city; and a similar misfortune should always be guarded against, when the muscular attachments of the tongue to the posterior part of the bone behind the symphysis are divided. A slight force exercised upon the left half of the body of the jaw, broke the connection at the symphysis and at the angle, and this part was easily removed. The next step consisted in the removal of the left ramus. The external surface of the branch of the jaw, and of the temporo-maxillary articulation were exposed, by dissecting the masseter upwards, as far as the zygomatic arch. Seizing the ramus in order to pull the coronoid process downwards below the zygoma, it was found that the temporal muscle was rigidly and permanently retracted. This circumstance presented an unexpected difficulty, which was increased by the unusual development of this apophysis, and by the retraction also of the pterygoid muscles. Passing the forefinger along the inner aspect of the ramus, the situation of the internal and external carotids was sought for and recognized. The insertion of the pterygoideus internus was then felt and cut, grazing the bone in doing so; the lingual nerve, here in close proximity, being carefully avoided. Passing still higher up, the orifice of the dental canal, indicated by an osseous projection, could be felt; and the instrument, still guided by the finger, divided the dental artery and nerve. The knife was thus made to separate the tissues attached to the inner face of the bone, as high up as a point situated about a line below the sigmoid notch, between the condyle and the coronoid process. On a level with this point, at the posterior margin of the ramus, the transverse facial, internal maxillary, and temporal arteries form a kind of tripod, the two last named branches of which should not be divided, if possible. It now became necessary to detach the tendon of the temporal muscle. As the coronoid process could not be depressed, I proceeded cautiously, by dividing the lower attachments of the tendon, by means of blunt curved scissors; and by using them and a probe-pointed bistoury, alternately—keeping close to the bone—a considerable portion of the tendon was divided. Deeming it not prudent to use freely a sharp cutting instrument, deep in the temporal fossa, where the coronoid process was situated, I made use of a pair of bone scissors, curved flatwise; and by passing the blades of this instrument over the process, as far as its position would permit, the temporal muscle was detached; a small portion of the apex of the coronoid process being cut through. The ramus, now movable, could be made use of as a lever to aid in the disarticulation of the bone.

"In order to effect safely the disarticulation of the condyle, I began by penetrating into the joint, by cutting the ligaments from *before backwards*, and from *without inwards*. The articulation was thus opened sufficiently to allow the condyle to be completely luxated. Blunt scissors were now used to cut carefully the internal part of the capsule, and the maxillary insertion of the external pterygoid muscle; and by a slow movement of rotation of the ramus upon its axis, the condyle was detached, and the operation was completed on this side. By proceeding to disarticulate by the method here described, injury to the temporal artery, as well as to the internal maxillary, was avoided.

"To effect the removal of the other half of the lower jaw, the same incision was made on the opposite side, so as to meet the first on the mesial line. The dissection was also similar; and by disarticulating the second condyle in the same manner as had been observed for the first, I was successful again in avoiding lesion of the temporal and internal maxillary arteries."

The object had in view, in shaping the external incisions, in such a way that an inverted V should be formed in front of the insertion of the genio-hyoglossi muscles, was to leave a portion of integument so fashioned, that the suture-pins could be passed through the integument, and, at the same time, through the root of the tongue, at the point where its muscles had been detached from the inner surface of the jaw. The several tissues becoming thus incorporated in the resulting cicatrix, served to form a new bridle, somewhat analogous to the natural muscular attachments of the tongue to the genial processes.

"The amount of blood lost was inconsiderable; the arteries divided, besides those mentioned, were the transverse facial, the anterior masseteric, the anterior parotidean, &c.; and these were secured as soon as divided. The bone being disarticulated, the flaps were adjusted, and the lips of the incision united, by eighteen points of twisted suture. The tongue was retained forwards after the dressing, by attaching the ends of the ligature already passed through its base, on each side, to a bandage passed vertically around the head. Forty-eight hours after the operation, the first dressing was removed. Union by first intention had taken place, and eight of the suture-pins were taken out. In ninety-six hours, the wound was again examined. Union was found to be entirely completed, and the remaining pins were removed. On the seventh day, it was thought safe to remove the ligature from the tongue. On the tenth day, the arterial ligatures came away; and on the fourteenth day, the patient was pronounced cured; not having had an untoward symptom since the performance of the operation."

The general condition and health of the patient at the date of the report are stated to be good, and that he is able to perform any ordinary vocation. "The ducts of Steno, on both sides, were necessarily divided in the superficial incisions; but there is no salivary fistule, the saliva taking its course into the mouth. The division of the branches of the facial nerve has not been followed by paralysis of the face; although for a time after the reunion of the incision, the orbicularis palpebrarum of the right side appeared to have lost its action to some extent. In grasping the chin, a thin cartilaginous deposit can now be felt, extending, crescent-shaped, for about three inches, and occupying the position at which the bone was most diseased. Higher up, toward the glenoid cavity, no deposition of bone or cartilage has taken place. Injury to the bag of the pharynx, during the detachment of the soft tissues from the angle of the jaw, was carefully avoided, and fluids could be swallowed, in small quantities, immediately after the operation. Deglutition is now effected without difficulty. Articulation is sufficiently distinct to render his words intelligible, and although unable to masticate, he does not complain of difficulty in eating, breaking up, as he says he does, his food between the tongue and the palatal vault of the superior maxillæ."

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Ovariotomy; Death in thirty-nine hours.—Dr. W. H. Van Buren has communicated to the New York Pathological Society (*New York Journal of Medicine*, March 1852) the details of a case in which he removed an ovarian tumour by the large abdominal section. The subject of it was "a married lady, forty-five years of age, of active habits, spare build and good constitution, had been

annoyed by an enlargement of her abdomen for seven years, during which time it had gradually increased to the size attained by most women at the seventh month of pregnancy. She had borne four children, and thought herself larger, and felt as if she carried more weight than with any of them. Her last childbirth dated five years before the commencement of the abdominal enlargement. This began whilst she was in the enjoyment of apparently excellent health, by the occurrence of a sudden and severe pain in the lower part of the belly, on the left side, about the position occupied by the left ovary; the pain at this point, which was of a sore, aching character, led to the discovery of a hard movable mass as large as an egg, apparently in the cavity of the abdomen. In a few days the pain disappeared spontaneously; but the newly-discovered tumour continued to increase steadily in size, thenceforward without the slightest pain, until the present time. She consulted several physicians, and was told she had an ovarian tumour; but few remedies were employed, and these exercised no apparent influence upon its growth. She continued in good health, suffering only inconvenience from the tumour, for five years, and menstruated regularly. At the end of this time a slight but continuous bloody discharge commenced from the vagina, and thenceforward no *periodical* increase of the discharge was recognized."

After a time there occurred a gradual protrusion from the vulva, consisting of the upper wall of the vagina, and posterior wall of the bladder. This gave rise to much inconvenience; "excoriation was caused by the contact of the urine with the protrusion, and it prevented her from taking active exercise; added to which there was now a manifest deterioration in her general health. Up to this period she was sensible of a great degree of mobility in the tumour, and was able almost to turn it over and over on itself.

"The increasing uneasiness and constant hemorrhage during the following two years was accompanied by a progressive increase of debility, and at the end of this time she had fully made up her mind to undergo the removal of the tumour, if such an operation were possible," and with that view consulted Dr. Van Buren.

On examination, Dr. V. "found the abdomen occupied by a tumour about the size of the uterus between the seventh and eighth month of pregnancy, and possessing a very considerable degree of mobility. It was evidently not of a fibrous hardness, but gave a sensation at most points of deep and obscure fluctuation; at one spot this fluctuation was quite evident. The cavity of the abdomen contained also a sensible, though trifling amount of fluid, showing that peritoneal effusion had already commenced.

"The tumour was evidently deeply received into the cavity of the pelvis; a finger in the rectum recognized this fact, and also the sensation of deep fluctuation in correspondence with the other hand placed upon the abdomen. By this manœuvre it was also attempted to lift the tumour out of the pelvis, but without much success; the impression being left by this mode of examination that adhesions might possibly exist connecting the tumour with the pelvis.

"By two fingers in the vagina the protrusion of the bladder with its upper wall was recognized, as well as the mobility of the uterus separately from the tumour, which was made out satisfactorily, although with difficulty, as also its natural size, situation, and weight. It was not found necessary to employ the uterine sound. I recognized, also, distinctly as I thought, ulceration around the greater part of the os uteri, and accounted thereby for the hemorrhage from which she had so long suffered. Under the head of adhesions, I find it mentioned in the notes taken at the time of this first examination, that 'the intestines maintained a suspicious proximity to the tumour in the right hypochondrium, especially when it is pushed well towards the opposite side.'

"As to her general condition at this time, she presented no evidences of disease, beyond what has been described, except a constantly too frequent pulse, and a slightly yellowish tint of skin; these were both considered as consequences of the habitual loss of blood, and she was advised to use twelve drops of the syrup of the iodide of iron, an hour after each meal, as a remedy called for in any event. Her appetite was habitually good, and the bowels had always acted well. She was thin, but not emaciated, and of firm fibre."

Dr. Mott saw the patient in consultation, and "after a thorough examination of the case, in which the difficulty of determining the existence and extent of pelvic adhesions was recognized as the only decidedly unfavourable feature in view of an operation, it was determined that an exploratory incision should be made on the linea alba, large enough to admit the hand, and that in this manner the extent of the adhesions should be ascertained. If the tumour should be found generally adherent to the pelvis, the operation was to be at once relinquished; if otherwise, its removal was to be effected.

"Dr. Mott considered her, on the whole, as a good subject for an operation, and that her general condition was favourable to its success."

The result of the consultation was made known to the patient, and the dangers of the operation stated to her, and she decided to have it performed. The patient was advised to take the iodide of iron, and on the 12th November, her condition being improved, the operation was performed. Her pulse was now 86, and there was no perceptible vaginal discharge. *Chloroform* was administered. "A male silver catheter was introduced into the urethra, and, as anticipated, the bladder was found to be almost entirely without the vulva, and containing a trifling amount of urine. An incision, about five inches in length, was made through the linea alba, extending from the umbilicus downwards, and the hand introduced through it into the peritoneal cavity, and well downwards into the pelvis; the surface of the tumour was felt everywhere round and smooth, and free from all connections, with the exception of an apparently slight attachment of the intestines, above and to the right, which had been previously expected, and the left, broad ligament, the pedicle by which it was attached to the uterus. Dr. Mott having also introduced his hand, recognized the same condition of parts; and it was immediately determined to proceed to the removal of the tumour. The abdominal incision was prolonged upwards, about four inches farther, when it was found that the bulk of the tumour could escape through it. This it did entirely, bringing with it a portion of the intestines, of which the mesentery was found to be adherent, over a space of about three square inches, to the upper part of the tumour, on its right side. These adhesions were dissected from the tumour, as closely as possible to its surface, and the bleeding vessels, which were unusually numerous, committed to the charge of Dr. Wood, who temporarily commanded them by pressure. On examining the pedicle of the tumour, which consisted of the broad ligament of the uterus, with its contained vessels, and the Fallopian tube, we were struck by the size of several enormous veins, as large as an ordinary finger, converging from the surface of the tumour towards the pedicle. My design was now to tie the entire pedicle, which was about three inches in width, by the application of several successive ligatures, close to the tumour, and then to remove it. In drawing the first ligature tight, the coats of one of these enlarged veins, which were unnaturally thin, gave way, and a considerable gush of venous blood followed; the size of the tumour, the management of which required both hands of one of my assistants, together with the shortness of the pedicle, which was almost concealed by the mass, rendered it impossible, without some little delay, to control the hemorrhage, and cut through its attachments; and during this time the exposure of the intestines, and the loss of blood, which was estimated, in all, at about ℥xij, gave rise to a considerable amount of prostration. The oozing from the mesenteric attachment was also somewhat obstinate, and required the use of six ligatures before it was entirely controlled; these were of the finest silk, and their ends were both cut off close to the knot. The wound was then brought together by means of large 'insect pins,' and the twisted suture, with intermediate strips of adhesive plaster, accurately applied. A compress and bandage completed the dressing.

"The patient's pulse, at this time, was about 120, and very feeble, and the surface cool. The influence of the chloroform had been allowed to subside, and there was a good deal of pain complained of, which seemed to be caused principally by the strangulation of the broad ligament.

"She was placed comfortably in bed, and ten drops of Magendie's solution of morphine, administered in ℥ij of brandy. This amount of morphine and brandy was repeated every half hour, until half past three o'clock P. M., when

she became tranquil, with a pulse of 82, and small, but reaction had evidently commenced. She still complained much of thirst, and beef tea was given in small quantities, with ice. At 7 o'clock P. M. reaction was entirely established; the pulse was 94, and fuller, and the surface warm; very slight complaint of pain. The beef tea exciting disgust, toast water was substituted for it.

"At 10 o'clock, on the morning of the 13th, her condition was as follows: pulse 130, small and weak; respiration thoracic, 38 in the minute; decubitus dorsal, legs drawn up voluntarily; extremities rather cool; expression of countenance unpromising; increased anxiety; occasional but slight restlessness; no pain; sense of increased debility. Eructation of wind continues troublesome; tympanitic distension of abdomen increased; complains of pain on pressure at its lower part. She passed water without assistance twice during the night, and has no return of the vomiting. Equal parts of brandy and strong beef tea were directed in the quantity of ℥j each hour with 10 drops of sol. morphine every third hour, with artificial heat to the extremities. Ice internally. At 3½ P. M., pulse more frequent and feeble; constant thirst; great prostration. Stimulus increased as much as possible, morphine being discontinued. 7 P. M., still sinking; occasional delirium. Continue stimulus. Death took place at 2 o'clock on the morning of the 14th, 39 hours after the operation."

Post-mortem eight hours after death. "The abdomen was very much distended with gas, in consequence of which the edges of the wound had been forced apart at one or two points; elsewhere adhesive union was evidently progressing. On removing the points of suture and enlarging the wound, tolerably firm fibrinous adhesions were found to exist uniformly between the parietes of the abdomen and the distended intestines, and also between their folds. The surface of the peritoneum presented very slight traces of vascularity. At the point where the ligatures had been applied to the broad ligament of the uterus, pus was found deposited to the amount of two or three drachms, surrounded by adhesions. About half a pint of serum, slightly tinged with blood, was found in the cavity of the pelvis. There were no coagula discovered.

"The uterus was removed. The mucous membrane around the os presented traces of vascular congestion, and was rough from the presence of enlarged glandulæ Nabothi, but there was no ulceration detected. On laying open its cavity a minute polypous growth of soft consistence was found adhering by a slender pedicle to its fundus. The organ was otherwise healthy.

"The remaining viscera in the cavity of the abdomen, as far as examined, exhibited no further evidences of disease."

The weight of the tumour was eight pounds, and was composed entirely of the left ovary. When laid open it was found to be encephaloid cancer.

Premature Discharge of Liquor Amnii.—Dr. W. N. Hurt records, in the *New Hampshire Journ. Med.* (Oct. 1851), the following case of this kind:—

Mrs. H., pregnant with her second child, about fourteen weeks after conception, was attacked with hemorrhage from the uterus, which continued more or less for about three weeks, when it suddenly became so profuse as to alarm her and her friends, in consequence of which I was called to see her. On my arrival, I found she was flooding considerably, with intermittent pains resembling those of the incipient stages of labour. I resolved at once to check the hemorrhage, and, if possible, to prevent abortion, which I knew must soon follow if the symptoms were not promptly met. The appropriate remedies were administered, which soon arrested the hemorrhage and relieved the pains, and with prudent management my patient experienced no farther inconvenience, with the exception of a slight return of the hemorrhage occasionally for a short time, which entirely disappeared as the patient regained her health and strength. This she continued to enjoy until, according to her calculation she was seven months and a half advanced in the pregnant state, when, as she was walking across the room, without any pain previously or at the time, the membranes broke, and a quantity of water was discharged. I was summoned in haste to attend her, and on my arrival, about an hour and a half after the accident, I found her entirely free from pain, though much alarmed at what had happened

to her. A few words, however, from me soon removed her apprehensions of danger, and she became composed and slept well through the night, the waters continually dripping from the vagina, and this continued more or less for several days. I remained with her only a short time, when I left her without prescribing anything for her except a purgative, which her costive situation demanded. She was up about sixteen days from this time, (her habits and manner of living being the same as usual,) when I was called to her again about ten o'clock at night. I found her in labour, her pains being slow but strong. These gradually increased in force and frequency until about four o'clock in the morning, when she was delivered of a very small, though living male child. The presentation and labour were perfectly natural, with the exception of the waters, which had been previously discharged. The physical developments of the infant convinced me that she had not arrived at the full period of gestation. The child looked for several weeks as though it were hardly possible for it to survive any length of time; but now at four months old it is improving very fast, and, I think, stands a pretty fair chance to be raised.

Statistics of Fractures of the Skull.—Dr. Frederick D. Lente has presented (*New York Journ. Med.*, Jan. 1852) a highly interesting and valuable statistical account of the fractures of the skull, occurring in the New York Hospital during the twelve years elapsing between the first of January, 1839, and the first of April, 1851.

The table embraces 128 cases, of which 106 were fatal.

"Of the 128 cases, the exact extent of the fracture was ascertained in 95. In 45 of these the fracture involved both calvarium and base.

"In 31 it involved the calvarium alone.

"And in 20 the base alone.

"In 26, or 20.31 per cent., both the brain and its membranes were lacerated; and in 4, the membranes alone. Of these 30 cases, only 3 recovered. In 10 cases there was *hernia cerebri*, only two of which recovered. In 19 cases, or nearly 15 per cent., the fracture of the skull was complicated with other fractures, most of them very serious, and many of them almost sufficient of themselves to produce a fatal result.

"*Fracture of the Base of the Skull.*—In sixteen of the fractures involving the base of the skull alone, the manner of the accident is mentioned. In thirteen it occurred from a fall from a height upon the head. In two, from the fall of a heavy body from a height upon the head; and in one from being beaten over the head with a club. Almost all these fractures, it will be seen, occur from falls upon the head, the base of the skull being thus forcibly impelled against the spinal column, and thus broken, the fracture being doubtless also due, in some measure, to *contre coup*.

"*Separation of the Sutures.*—In *three* cases, there was separation of the sutures without any fracture. In *four*, separation of the sutures accompanied by fracture. In all these cases, the anchylosis of the sutures, judging from the condition of those uninjured, was perfect. In *five* out of the seven cases, the injury was occasioned by a fall from a height, striking upon the head; in one from a blow by a passing rail-road car, and in one from a blow with a club. This is a rare form of fracture, and only occurs, according to the authorities, from a very severe injury.

Fracture of the Internal Table without Injury of the External.—In no case was this precise condition of things observed; but in two instances there was a very near approach to it, there being a mere fissure of the external plate, with fracture, attended by considerable depression of the internal. In one of them, the specimen of which is preserved in the pathological cabinet of the hospital, the fissure of the external table was so very slight as to be undiscoverable upon a first examination of the calvarium after its removal.

"In two cases there was fracture of the calvarium by *contre coup*.

"*Condition of the Pupils.*—In all the cases, twelve in number, where the extravasation or depression was confined to one side, and the pupils affected differently, the *dilatation* was on the *same side* with the cause of compression. In none on the opposite side. But, in many cases where this cause was situated exclu-

sively on one side, no particular difference was noticed in the condition of the pupils, they being entirely unaffected, or affected alike. In *twelve* cases, in which the symptoms of *compression* were well marked, the patients not being in immediate danger of death, the pupils were *dilated* in *ten* (10), contracted in *two* (2).

"*Paralysis.*—In *eleven* cases in which there was hemiplegia, whether partial or total, rarely the latter, and where the injury was mostly confined to one side or the other, it was found to affect the opposite side in ten (10), the same side in one.

"*Trephining.*—In forty-five cases in which this operation was resorted to, not distinguishing between the application of the trephine proper and of the various instruments appertaining to a trephining case, *eleven*, or about one-fourth, recovered.

"The operation was performed *prophylactically* in ten (10), of which three were cured; *therapeutically* in thirty-two (32), of which eight were cured. In three of the latter, the operation was secondary, of which two recovered. In seven of the cases trephined, the fracture was simple. In five cases, incision of the *dura mater* was practised, of which none recovered.

"In no case did death follow the receipt of the injury until after the lapse of some hours, even in the most desperate cases; nor does it appear to be possible for an ordinary blow upon the head, producing fracture of the skull, to cause immediate death. The nearest approach to it I ever saw was just previous to the termination of my term of service in May last; I was called into the yard to see a man in a carriage, who, it was said, had just fallen from the rigging of a ship to the deck, striking upon his head; this was the history obtained from his two shipmates who brought him to the hospital. Upon examination, I found the case hopeless; the man was perfectly dead, and had given no signs of life after the accident; he was not removed from the carriage. I could detect no fracture of the skull, and none of the neck, and yet either might have existed; probably a half hour or hour elapsed between the receipt of the injury and his arrival at the hospital. In a recent criminal trial of great interest, it will be recollected that, at one stage of the proceedings, it was much discussed whether a blow upon the head with an ordinary weapon capable of inflicting death, could produce this result instantaneously; many eminent surgeons were examined, and the general impression was, that the thing was exceedingly improbable if not impossible, and the question was thus decided."

Fractures of the Cranium.—Dr. John Hardin, of Louisville, Ky., relates, in the *Western Journ. of Med. and Surg.* (March, 1852), some interesting cases of fracture of the cranium, of two of which we shall give a brief abstract.

Case I. The subject of this was a negro man between thirty and forty years of age, who, in the spring of 1844, had been struck on the head with the back of a hoe, which laid open the scalp. As there were no symptoms of cerebral compression, the wound was simply dressed, and soon healed. A few months afterwards epilepsy and insanity supervened. In the fall of the same year he was seen by Dr. H., who decided to apply the trephine. A crucial incision was made, and the flaps turned back, exposing a depression large enough to admit the end of the thumb, and about half an inch in depth; which was filled with a substance of recent growth, of a fibrous structure. The crown of the largest trephine barely included the whole of the depressed portion. Upon sawing through and removing this, there were found numerous spicula pressing upon the dura mater, none of them, however, so far as could be ascertained, penetrating that membrane. These were all carefully removed. The dura mater was of a deeper red colour than natural, evincing circumscribed, chronic inflammation. The recovery of the patient from epilepsy and insanity was complete, in a few weeks, but his general health, which had become very much impaired, was not restored, and a year afterwards he became the subject of paralysis of the lower extremities with dropsical effusions, and he died about two years after receiving the injury. No autopsy was made.

Case II. This was a lad, sixteen years of age, who had fallen, five months previously, from an apple tree, and received, in the superior internal portion of the orbit, a hard seasoned sprout which was growing at the root of the tree.

It was supposed that as he arose the snag was withdrawn, leaving a small wound through the eyelid. This wound remained open, and continued to discharge matter for some weeks, when it was ascertained that the foreign body was still lodged in the cranium. It was promptly removed and the wound healed; but, soon afterwards, the young man was seized with epileptic convulsions, and subsequently passed into a furious insanity. At this stage of his malady, Dr. Hodgen, of Campbellsville, was called to attend him, and he requested my advice in the case. Not being apprised of the extent of the injury, but seeing that the brain was greatly diseased, we determined on an exploring operation. At this period the patient had from fifteen to twenty convulsions daily. An inverted A incision was made on the forehead above the injury, the flap turned down so as to expose the superciliary ridge, and upon the verge of this the centre-pin was fixed, so as to remove a little more than half a circle of bone; when this was removed, the superior orbitar plate was found to be in a state of comminuted fracture; the fragments were carefully extracted; the internal wall of the frontal sinus, being in a state of integrity, was not interfered with; the membrane lining the sinus was in a state of subacute inflammation, and the operation was consequently very painful. The flap being replaced, water dressings were applied; the young man had but one fit after the operation, and four years afterwards, when Dr. H. last heard from him, he was in the enjoyment of sound health of body and of mind.

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American Medical Association.—The fifth annual meeting of the American Medical Association will be held at Richmond, Virginia, on Tuesday, May 4th, 1852.

All secretaries of societies, and of other bodies entitled to representation in this Association, are requested to forward to the undersigned correct lists of their respective delegations as soon as they may be appointed.

The following is an extract from Art. II. of the Constitution:—

"Each local society shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half of this number. The faculty of every regularly constituted medical college or chartered school of medicine shall have the privilege of sending two delegates. The professional staff of every chartered or municipal hospital containing a hundred inmates or more shall have the privilege of sending two delegates; and every other permanently organized medical institution of good standing shall have the privilege of sending one delegate."

The medical press of the United States is respectfully requested to copy.

P. CLAIBORNE GOOCH, M. D.
One of the Secretaries, Bank Street, Richmond, Va.

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Medical Society of the State of Pennsylvania.—This Society will hold its next annual meeting in Philadelphia, on the last Wednesday in May (26th), at 11 o'clock A. M.

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